

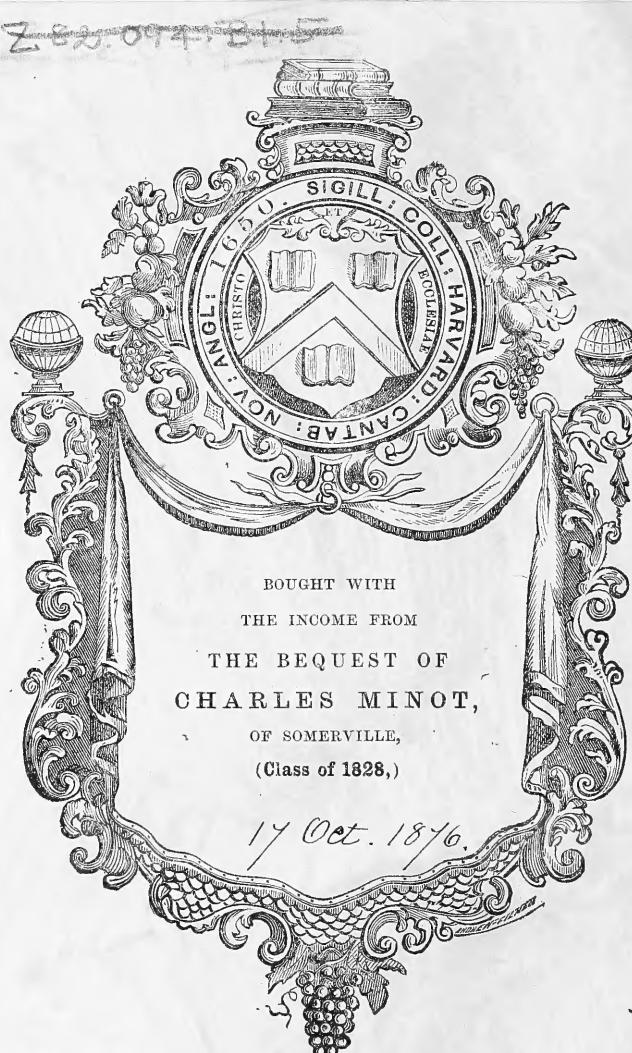
BIRDS OF EUROPE
Not Observed In The
BRITISH ISLES

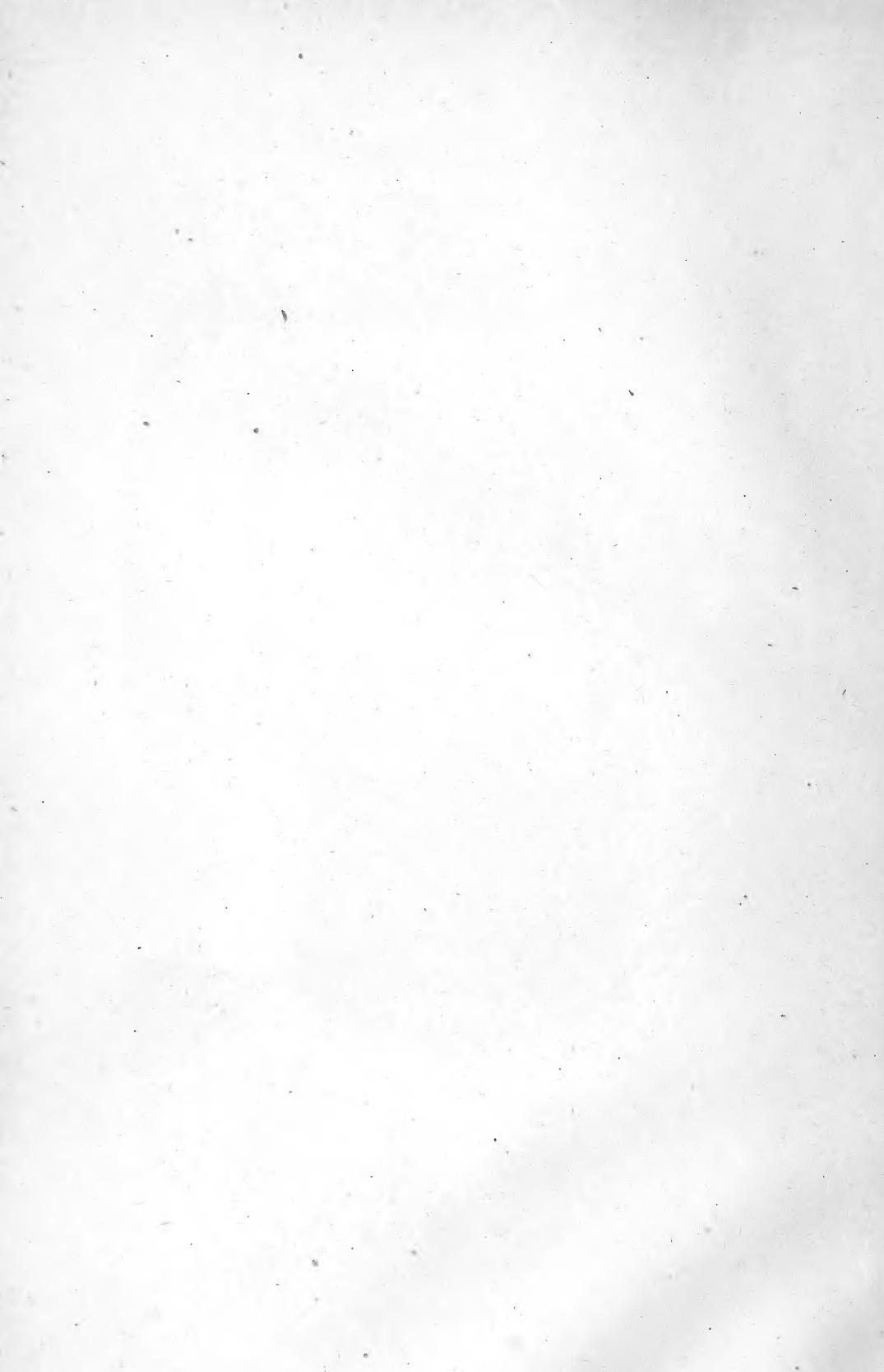


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SCARLET BULLFINCH.





A HISTORY
OF THE
BIRDS OF EUROPE,

NOT OBSERVED IN THE BRITISH ISLES.

BY

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SECOND EDITION, ENLARGED.

VOL. IV.

"Join voices all ye living souls; ye birds
That singing up to heaven-gate ascend
Bear on your wings and in your notes His praise."

MILTON'S PARADISE LOST.

L O N D O N :

GEORGE BELL AND SONS, YORK STREET, COVENT GARDEN.

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1876, Oct. 17.

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BIRDS OF EUROPE,

NOT OBSERVED IN THE BRITISH ISLES.

GRANIVORÆ.

Family FRINGILLIDÆ. (Bonaparte.)
Genus CARPODACUS. (Kaup.)

Generic Characters.—Bill short, conico-convex, and thick at the base, the sides inflated and bulging, tumid and compressed at tip,—longer than that of *Pyrrhula*. Commissure sinuated, or with a notch near the base. First three primaries longest, and subequal. Tail distinctly furcate. Feet robust; claws well curved.

SCARLET BULLFINCH.

Carpodacus erythrinus.

<i>Carpodacus erythrinus,</i>	GRAY. KAUP. BONAPARTE. DUBOIS.
<i>Pyrrhula erythrina,</i>	TEMMINCK. BREE; 1st. edition.
<i>Loxia erythrina,</i>	PALLAS. GMELIN.
<i>Erythrositta erythrina,</i>	BONAPARTE.
<i>Pyrrhulinota rosacolor,</i>	
<i>rosea et erythrina,</i>	HODGSON.
<i>Erythrothorax rubifrons,</i>	BREHM.
<i>Loxia cardinalis,</i>	BESKE NEC LINNÆUS.
“ <i>obscura,</i>	GMELIN. ♀
<i>Fringilla flammea,</i>	RETZIUS.
“ <i>incerta,</i>	RISSO.
<i>Pyrrhula sinaica,</i>	MÜHLE; Orn. Griech.
<i>Bouvreuil Cramoisi,</i>	OF THE FRENCH.
<i>Brand Rosengimpel,</i>	OF THE GERMANS.

Specific Characters.—Rump red or ash-coloured; abdomen pure white. The first primary equal in length to the third, and shorter than the second. Length five inches and a half; carpus to tip three inches and a half; expanse of wing ten to eleven inches; the closed wing reaches to two inches and a half of the length of the tail; tarsus nine to ten lines; middle toe seven lines, and its claw three lines; hinder toe four lines, and its claw three lines.—NAUMANN.

THE Bullfinches are a beautiful race of birds, and how much soever our own British species is valued for this quality in our eyes, it is perhaps surpassed by the subjects of the present and following notice, which have however been placed by Kaup and modern writers in the genus *Carpodacus*, a small group of birds characterized, according to the late Mr. Blyth, by having the bill midway between the true Bullfinches and the Linnets, and the males by being more or less tinged with rosy and becoming crimson in the breeding plumage. The females are streaked with brown, and have no yellow in their plumage.

The Scarlet Bullfinch inhabits the regions of the arctic circle, in the north of Europe and Asia. It is found in Sweden, Norway, Finland, Russia, and Siberia, more particularly near the Rivers Volga, Samara, Oder, and Selenga. It occurs solitarily in Courland and in Poland; and Naumann especially mentions having found it in the summer of 1816, on Sylt, one of the islands on the west coast of Jutland. It occurs accidentally in France, Belgium, Switzerland, Italy, and Central Germany, and has been captured at Hesse, on the Rhine. Degland mentions that individuals have been shot at Abbeville, at Tournai, in the neighbourhood of Milan, and on the Swiss Alps; and Nordmann tells us, in the "Faune Pontique," that it comes regularly in spring into the Botanic Gardens at Odessa, either singly or in pairs, and that it is common in the provinces situated to the east of the Black Sea. It is mentioned by Count Mühle as occurring in Greece, under the name of *Pyrrhula sinaica*. It occurs in India and China.

During the summer it is essentially a northern bird, but in the autumn it migrates southwards. If it stays the winter, it is found more especially in the neighbourhood of dwellings, where it can be sheltered among the shrubs. It is very fond of moist situations, and is frequently found among the bushes on the banks of rivers, lakes, and ponds, where it may be seen on the willows or reeds.

In the "Richesses Ornithologiques du Midi de la France," by Jaubert and Barthelemy la Pommeraye, there is a very interesting description of this bird, which is an occasional straggler into France,

and from this I will make some extracts. I do this the more willingly, as their remarks refer to a bird about which much uncertainty has existed up to modern days, I mean the *Fringilla incerta* of Risso. Mr. Dresser, in his "Birds of Europe," maintains that the birds taken in England and baptized *F. incerta*, are merely hybrids between the Common Linnet and the Greenfinch, but that the real *F. incerta* is the female of *Carpodacus erythrinus*. Mr. Dresser states that neither Mr. Gould nor myself had alluded to this bird. Mr. D. is, however, mistaken. If he will refer to my book, vol. iii., p. 119, he will find the following note:—" *Fringilla incerta*, Risso, (*Chlorospiza incerta*, Bonaparte,) is only the young of *Pyrrhula erythrina*." The young birds being very like the adult females, both have probably passed as *P. incerta*.

"The history of this bird," says M. Jaubert, "is certainly one of the most singular that we have given in this work. Described in 1788 by Gmelin, and after having successively passed from one genus to another, we find it in 1853 perfectly fixed on the one hand with the Bullfinches, of which it has all the characters, and on the other with the Grosbeaks, where the inattention of authors had till these days maintained it. Singular fortune for a type contained in nearly all collections. M. Degland, in the first instance, having discovered a Bullfinch in a young *Chlorospiza incerta*, constituted it, but not without hesitation, his *Pyrrhula incerta* (Orn. Eur., t. 11, p. 540), which produced a sharp admonition from Prince Charles Bonaparte. Could there be any reason for M. Degland to claim later a priority so lightly accorded by the Prince in the 'Revue de Zoologie,' 1854, on a question in which the author had only confirmed the existence of a species which I upset definitely some months later, by showing the identity of *Chlorospiza incerta*, Bonaparte, with *Erythrosipa erythrina*, Bonaparte? I am supported by the following reasons: 1. Between the two birds there does not exist a single distinctive character to separate them. Accidental variations of the beak are of no importance when we compare a series of individuals. 2. The female of the adult Scarlet Bullfinch is identical with that of *Chlorospiza incerta* kept in a cage. Their eggs are the same. 3. The young resemble each other. 4. We have seen accidentally the bird assume the green when at liberty, and the red in captivity. 5. The adult *Chlorospiza incerta* is never seen in the fields; it is the child of our aviaries. 6. Analogy between this phenomenon of captivity and that which takes place among the species which take in the same red colour in confinement. 7. Lastly, the native country of *F. incerta* is unknown. It is now a decided question."

We believe the opinion which was arrived at by M. Jaubert was

the correct one. It has been held by ornithologists ever since. The omission of the name among my synomynes in the first edition was purely accidental.

Dr. Schrenck thinks "that the specimens killed on the Amoor are more splendidly coloured than those from China, the Altai Mountains, and Europe. Those from Kamtschatka are hardly inferior in the brilliancy of the colours. The female from the Amoorland has the well-known dull olive brown plumage tinged with green, particularly on the rump and back, and more so than in the representations of Bonaparte and Schlegel. The Scarlet Bullfinch is spread over the whole of Siberia to Kamtschatka, as recorded by Gmelin, Stiller, Pallas, Kittlitz, and Middendorff, also appears in the Amoorland, and there nests in the thick willow plots of the lower and often bog islands of the Amoor River. It breeds there the beginning of June."

Naumann has given a very complete account of the bird, from which I have gathered the following:—"For several years, in the early spring, a pair of these birds were seen near Breslau, among the willows and reeds of a swampy district. The male and female were always near together, and the former sung gaily. They were both killed at a single shot, but the female was not found. The male is now in the museum at Berlin. Later another pair were also shot.

"This bird does not, according to my observation, like large thick woods. I have seen it where there were none at all, namely, at Sylt, in Jutland. In one part of this island there are no other species of trees but small thorn bushes.

"In the northern narrow part of the island, where, between high sand downs, a narrow creek runs into the land, is a little thicket surrounded by a low earthen wall, in which is the renowned duck decoy. The ponds, canals, and the decoy man's house are all surrounded by alder trees and thorn bushes. There is also a thick reed bank, about ten feet high, which is all the protection that the neighbouring downs receive from the devastating north-west storms. Altogether it is not more than a hundred paces in circuit. The wood is quite stunted, yet it is, for such a neighbourhood, a very interesting spot; and for me it became still more so when I myself met with the Scarlet Bullfinch, which I had never seen before in its free state. The male came to within fifteen paces, into a thorn bush, and sang. It allowed itself to be observed freely, without any marks of fear. The female was not to be seen, nor the young, which had already (June 7th.) left the nest. The old decoy man, who chiefly dwelt there, knew of the nest, and took me to it, assuring me that these birds had for many years bred there, and that they were not rare in

the island. That they also bred in the elder and meadow thorn bushes near the house, and were pleasant-singing cage-birds. After much seeking we found no more, but we discovered the Common Linnet, for which they may probably have been mistaken by the decoy man."

"The Scarlet Bullfinch is very confiding towards man, being not at all shy. The singing male remains in the open, like the Linnet, upon the points or tips of bushes, and flies away like a shot when disturbed. Its call is a clear, piping, high tone, similar to 'ticke, ticke, tuk,' twice repeated in a clear and perceptible manner. When a part of the song has been uttered, as far as my observation extends, the whole tone is varied into a long cadence."

"When with my friends Von Woldick and Boie I last approached this celebrated decoy, at Sylt, I heard the song at a considerable distance, and I drew their attention to it, that there might be no mistake. The resemblance of the song to some of the notes of the Reed Bunting, as well as those of the Linnet, is a remarkable fact. Both these latter birds live in its neighbourhood. It is a very agreeable, loud, long, and, with many slight pauses, unbroken song; and it is so characteristic, that an ear like mine, which from earliest youth has been accustomed to observe the song of birds, can distinguish it in the far distance. In a neighbourhood where little can escape the eye, the beautifully-plumaged songster was easily recognised and, as we did not like to shoot it, we placed ourselves at a short distance, where, unseen, we were able to observe it for a considerable time. It may be an agreeable cage-bird, but in confinement the red plumage turns into a permanent yellowish green."

Herr Meves, in his Journey in North Russia, before alluded to, remarks of this bird:—"I heard its joyful song first on my way to Schlüsselburg. The best notes may be described as something like 'hvitt-tvy-tvöä,' 'hvitt-tvöä,' with other variations towards the close of the song. I met with it also near Ladoga and Onega. I shot some specimens which were on the upper parts a dark olive, with streaks of grey in the older birds. In the breeding dress the grey shaft spots were of a lighter colour. In June the red was dull, but in August bright. The eggs, four in a nest, were of a bluish green, with grey brown points, 21.5 by 15 millemetres; the least was 20 by 14 millemetres. In some others the ground-colour was decidedly leaden. The egg from Moscow was more rounded, 19.5 by 15.5 millemetres; and three from Dauria, June 17th., 1867, measured 19 by 13.5 millemetres: they were bluish grey ground-colour, with large dark brown spots." The above is a good deal condensed in translation.

Salvadori ("Fauna d'Italia") writes:—"This species is very rare in Italy. It is sometimes found in Liguria, Venetia, Nizzardo, and Lombardy. I believe it has never been found in Rome, in Southern Italy, or in Tuscany. It does not appear to me that the individual recorded by Bruscoli (Acts of Italian Society, 1841, p. 374,) belongs to this species, though Temminck, Degland, and Malherbe say that it is found in Sicily, but they doubt if it has ever been captured there. According to Schembri, two individuals have been taken in Malta. I believe that adult males have never been taken in Italy, but always young birds, unless the individual taken in the mountains of Ortu, in Lombardy, December, 1842, was an adult. This bird was announced by Balsamo Crivelli under the name of *Pyrrhula erythrina*. It is a native of Northern Asia, from whence it emigrates in great numbers to India. It is also common in European Russia. De Filippi found it common in Persia. There is no longer any doubt that *F. incerta*, Risso, is a variety of this species, which was proved by rearing young birds. I have seen several individuals sufficiently modified to be thought distinct, two of them kept by Segnor de Negri in Geneva. One of these had been in a cage for five years, and only in the third year had taken the yellow, almost golden colour on the front of the neck and top of the head."

Doderlein says of this bird:—"This species has been known up to this time as *C. incertus*. It is very rare in Sicily. It was first called *Fringilla olivacea* by Rafinesque, when he saw it in the neighbourhood of Palermo in 1810, which was its first name. Risso observed it after in the neighbourhood, and called it *F. incerta* in 1826. Later still it was noticed by Professor Calvi and the Marquis of Durazzo near Geneva, by Verany at Nice, by P. Roux at Marseilles, and by Malherbe in the Pyrenees, and contemporaneously it was described and figured by Bonaparte in his splendid work the 'Fauna Italica.' More recently, in March, 1835, other individuals were taken at Lavagno, (Perini), and in October, 1846, at Tamai, in Friuli; a specimen was kept alive for many years by Cantarini, and by Nardo at Venice. Perini announces the capture of two individuals, adult females, one in 1850 in the mountains of Valdagno, and another in 1856 in the Veronese territory, to which he adds a third taken in 1857 at Calcinati, in Bergamasco. Two individuals were procured alive in 1864 by Segnor Negri at Geneva. It appears then that this bird must be ranked among the birds of Italy and Sicily."

The Scarlet Bullfinch lives upon various kinds of seeds, more especially, according to Dubois, those of an oily nature, as well as those of the elm or alder. Naumann also suggests that it feeds upon



1. SCARLET BULLFINCH.

2. DESERT TRUMPETER BULLFINCH.

the seeds of the reeds, among which it likes to live. The same authority informs us that it nests among the woody plantations in the neighbourhood of St. Petersburg. Jaubert says it will also eat insects.

The nest is formed of wool, dry grass stalks, and twigs, and lined with feathers and horse-hair. It lays five or six eggs, light green, spotted at the larger end with small black dots.

Brehm, in Bädeker's work upon European eggs, has the following notice of the nidification of this bird:—"They nest in the thick woods and bushes of Siberia, in Lausatia, in the neighbourhood of Galitz, in Galicia, and in Poland—near Warsaw, where it is found in swampy situations overgrown with alder trees. Once, in June, it was met with, paired, in Renthendorf. The nest is placed in a bush, and is made of moss, sticks, dry twigs, and sheep's wool, and is lined with hair and wool. The eggs are a lively blue green in colour, more or less marked with black or brownish dots and spots on the larger end. They are inclined to pear-shape in form, without, like the other Bullfinches, being swollen in the middle."

The male in breeding plumage has the small feathers in the nostrils and around the neck, of a dull rose-colour; the base of all the feathers, as well as a narrow streak along the shafts, of a brown red; rump, sides of the head, throat, front of neck, and chest, of a bright or rose crimson; belly and abdomen of a pure white; back and wing coverts ashy brown, tinged with a little red towards the extremity or tips of the feathers; quill feathers of both wings and tail blackish brown, bordered with reddish; tail forked, beak and feet brown.

The female has all the upper parts of an olive brown. Wing coverts tipped with white, forming two bands across the wing. Primaries and tail feathers darker olive brown; secondaries slightly bordered with white. Throat and cheeks regularly spotted with brown; front of neck and all the under parts of a greyish white, marked with large longitudinal spots of dark brown; middle of belly without spots. It is stated that the male adopts in winter the plumage of the female.—(Temminck.)

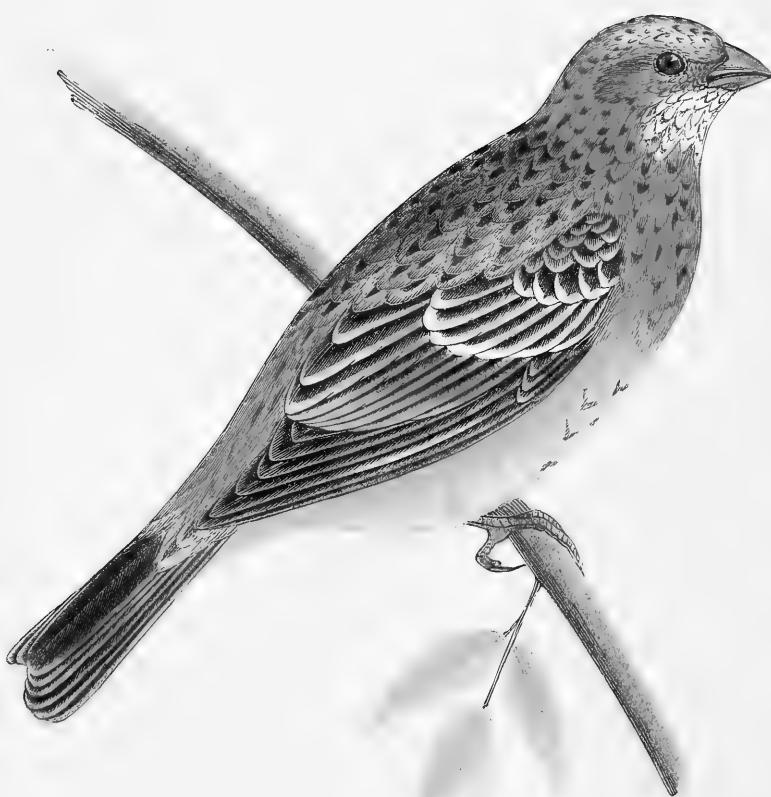
The young males are not red in the first year; they have a remote similarity to the female of our Linnets, but are distinguished from them by having more of a greenish tint pervading the whole plumage, especially through the yellowish borders of the wing feathers; the head, under part of the neck, back, and shoulders, as well as the wing coverts, are brown grey, but something brighter on the borders of those feathers which are of a greenish colour; rump dirty yellow green; the dirty white throat has down its sides small brownish

feathers, which become larger on the upper part of the breast, where the ground is also brownish, but on the sides is shaded into brownish grey; belly and under wing feathers dirty white, without spots; the dark brown wing feathers have on the outer side a yellow greenish bordering, which makes them brighter; beak and feet are like those of the old male, but of a brighter colour, namely a dirty yellowish or brown yellowish flesh-colour, the tips of the claws being dark brown.—(Naumann.)

In the first part of the Bulletin of the Imperial Society of Naturalists of Moscow, for the year 1860, there is an article by Alexander von Nordmann, upon the birds of Finland and Lapland, in which he states that *P. erythrina* is very common in Southern Finland, which was not the case, according to the testimony of his father, thirty years ago. It builds every year in the Botanical Gardens at Helsingfors, in the tops of the maple and *Carangana sibirica*. It arrives at Helsingfors in the middle of May, and the young are fledged by the 25th. of June. The nest is made loosely of twigs. The eggs are white, with a few blackish red spots at the large end. The voice of the bird is loud and flute-like, easily recognised again when once heard. It has a call-cry similar to our Greenfinch.—(See “Ibis,” January, 1861, p. 111.)

The male figure of my bird is from a specimen in my own collection, sent to me by Moeschler of Herrnhut; it was killed on the Volga. The female was kindly lent me by Lord Lilford. The egg is also in my own collection, and was sent to me by Dr. Meves of Stockholm. I have also another, taken by Dr. Dybowski in Siberia. Both these eggs are a lively blue green, with black spots at the larger end. Bädeker’s figure and description in the first edition were similar, showing the above account of the egg by M. Alexander von Nordmann to be absolutely incorrect. It is recorded by Herr Collett as breeding at Polmak, on the Tana.

The bird has also been figured by Gould, B. of E., pl. 206; Dubois, Oiseaux de la Belgique, pl. 117, (male and female;) Naumann, Natur. der Vogel Deutsch., pl. 113, (male and female;) Dresser, B. of E., (male and female.)



ROSY TUI FINCH.

GRANIVORÆ.

Family FRINGILLIDÆ. (Bonaparte.)
Genus CARPODACUS. (Kaup.)

ROSY BULLFINCH.

Carpodacus roseus.

<i>Carpodacus roseus,</i>	KAUP. BONAPARTE.
<i>Pyrrhula rosea,</i>	TEMMINCK. BREE; 1st. Edition.
" "	NAUMANN; t. 113. GOULD; B. of E., pl. 207.
<i>Passer roseus,</i>	PALLAS; Zoog., t. 42.
<i>Fringilla rosea,</i>	PALLAS AND AUTHORS.
<i>Propasser roseus,</i>	GRAY; Hand List, No. 7522.
<i>Bouvreuil-rose,</i>	OF THE FRENCH.
<i>Sibirischer Rosengimpel,</i>	OF THE GERMANS.
<i>Moineau rose,</i>	OF PALLAS; Voyage Appendix.

Specific Characters.—The vertex red, with silver-white spots; throat also mottled with crimson and white; rump crimson or yellowish white; two transverse bands of white across the wings. Length five inches and a half, French, (Temminck,) six inches and a half, German, (Naumann;) expanse of wings eleven inches and a half; length of somewhat notched and forked tail two inches and five eighths. The wing does not reach to half the length of the tail; the club-shaped beak five and a half lines; tarsus three quarters of an inch; middle claw and toe seven lines; hinder toe and claw rather over six lines; legs and toes covered with scales.—(NAUMANN.)

THE Rosy Bullfinch is described by Naumann as the most beautiful of our Northern European birds. Closely allied to the last species, it yet differs from it in size and ornamentation. Its beak is quite different, being narrower and more pointed, having more the character of that of the true Finches. The measurements also of the two species,

which I have taken from Naumann, shew very important structural differences.

The Rosy Bullfinch is found in Northern Asia, principally in Siberia—on the banks of the rivers Uda, Selenga, etc., visiting in the winter the eastern parts of the south of Europe, and occasionally it has been captured in Hungary. It has also, but very rarely, been seen in the north-east of Germany. It has also been included by Professor Blasius among the list of birds captured in Heligoland.

Very little is known of the natural history of this bird. This may in a great measure arise from its being very frequently mistaken for the last. Pallas says, however, that even in Siberia it is rare and solitary, occurring on the Uda and Selenga rivers among the willows. Schrenck confirms this, and further observes that in summer it moves northwards to the banks of the Lena. He did not observe it in the Amoor in summer. It came in the autumn about the middle of October. He shot one as early as September 22nd. They came in small flocks. Naumann senior saw it free once only, and then was not acquainted with its name for several years after. Temminck, in the first edition of his "Manual," confounded it with the Scarlet Bullfinch.

The Rosy Bullfinch likes to live in bushes which grow near water, and occasionally comes into gardens, accompanied by the Snow Bunting. It feeds upon all common seeds, according to Naumann, and on the kernels of various berries. About its propagation nothing is known.

The adult male has the top of the head rose; forehead and throat of a silvery and shining white; vertex, neck, and body of a very bright crimson red, with the feathers of the back and scapularies black in the centre; two bands of a rosy white on the wings, of which the coverts are edged with dirty white; cheeks, lower part and sides of neck, and chest, crimson red; belly and under tail coverts rosy white; primaries and tail quills brown, edged with rose on the outside; beak and feet clear brown.

The following is Dr. Schrenck's account of the female:—"It is true that Bonaparte and Schlegel figure the nominally full-grown female of *P. rosea* without the slightest sprinkling of red. This must be the young female, for Pallas describes the old female as having on the throat, neck, rump, and particularly the forehead, a stronger or weaker cinnabar red flush or sprinkling, which is confirmed in the specimens from the Amoor, as well as one in our museum from Western Siberia. In all these a very visible reddish flush extends over the throat and upper part of the breast, paling down more and more on the abdomen, and even to the under tail coverts. On the upper parts this flush is particularly marked towards the forehead, on the crown

of the head, and on the rump, and in paler shades on the otherwise reddish yellow edges of the feathers on the back and the lesser wing coverts. The specimens vary in this matter according to age, and probably also from climate and other influences. So also the red in our specimens from the Amoorland, although exactly distributed as in the bird from Western Siberia, is yet paler and more of cinnabar than rose-colour, as in the latter."

In the young before the first moult the entire plumage is of a reddish grey, longitudinally spotted with brown; with two bands of reddish yellow on the wing, and the rump yellowish. After the first moult a little white appears on the forehead, and the red becomes more brilliant while the spots disappear: thus the specimen described by Pallas as having white only on the forehead, and with its plumage browner, must have been a young bird after moulting.—(Temminck.)

The following is from Naumann's account of this bird, which I insert to make my description as complete as possible. I quote from the above accurate observer's beautiful work on the "Birds of Germany," a work, which I may take this opportunity of saying, is, in my opinion, both for full and elaborate description, and for the beauty and natural expression of its illustrations, perhaps unrivalled in ornithological literature.—"The size is that of a Mountain Finch, and larger than the Common Linnet, but in contour it somewhat resembles them both. The beak is reddish grey, the root of the superior mandible being yellowish; the round nostrils are ornamented with stiff small feathers, and the iris is rust brown. The brownish yellow feet are tolerably strong and robust; the claws, not very large, but sharp, are dark brown at the tip, but have otherwise the colour of the feet.

"The old male has two distinct characters of plumage,—brown, and a splendid carmine red; and the last, with which the whole bird seems to be suffused, makes it one of the most beautiful of northern birds. The head and neck are carmine red, with a brown grey sparkling through it, so that the feathers (like, in fact, those of the whole bird,) are more or less dark, having a ground of grey and white, and the red colouring only taking possession of the tips or edges of the feathers. On the temples, the hinder part of the head, the throat, to the middle of the breast, and the rump, this colouring is the brightest, a deep brilliant rose red; and on the sides of the breast dark brown arrow-shaped spots on a whitish ground, becoming larger on the flanks, with, on this part of the body, a yellow white tinge; the belly and under wing coverts are white, with rosy red borders. There is one peculiarity to be noticed, namely, that in this northern bird, as well as in the male of *Pyrrhula longicauda*, Temminck, which is the *Loxia sibirica*

of Pallas, the feathers of the vertex and throat have a silvery scaly appearance, and the barbs of the feathers, as well as their points, have a bright shining white colour. The shoulders and upper part of the back are dark brown, spotted with red streaks; the dark brown feathers of this part have borders of carmine red; the greater feathers of the shoulders have also white borders. All the wing feathers have a dull dark brown ground; the lesser wing feathers carmine red borders, the greater, broad white borders, with rosy red tips. The greater wing coverts rosy red borders with white tips, forming two oblique borders of white across the wings. The upper tail coverts bright red, with dark brown arrow-spots, and the darker brown tail feathers, of which the outermost are merely somewhat lighter, have rosy red borders; the underneath wing and tail feathers are light brown grey; the under wing coverts dirty white, spotted with brown, having, at the edges, a tinge of rosy red.

"In the autumn plumage, the borders of the wing and tail feathers are broader, shading into a brownish white, and in the back and shoulder the red bordered feathers have besides brownish white edges. The splendid red is there also darker, and acquires its brilliancy by degrees under the influence of air and sun.

"Probably the young male is not so beautifully red, and in the first year perhaps not at all so as in the preceding species, (*P. erythrina*,) and the females of both are certainly very similar. I have only seen two male stuffed specimens of this splendid bird to examine and compare with *P. erythrina* and *P. purpurea*, the *Bouvreil violet de la Caroline* of Brisson."

Of its nidification nothing is known.

It has been figured by Pallas, Zoog., t. 42; Gould, B. of E., 207; Naumann, B. of E., t. 113; Bonaparte, Lox, t. 19-20.



DESERT TRUMPETER BULLFINCH.

GRANIVORÆ.

Family FRINGILLIDÆ. (Bonaparte.)
Genus CARPODACUS. (Kaup.)

DESERT TRUMPETER BULLFINCH.

Carpodacus githagineus.

<i>Pyrrhula githaginea,</i>	TEMMINCK. ROUX.
“ “ “	BOLLE; Naumannia, 1858, p. 369.
“ “ “	BREE; 1st. Edition.
“ <i>payreaudaei,</i>	AUDOUIN; Descr. Egypt. Zool.
<i>Fringilla githaginea,</i>	LICHTENSTEIN.
“ <i>thebaica,</i>	HEMPRICH; Sched. Mus. Berolin.
<i>Erythospiza githaginea,</i>	BONAPARTE.
<i>Carpodacus payreaudaei,</i>	GRAY; Gen. of Birds.
<i>Bucanetes githagineus,</i>	CABANIS; Mus. Hein., p. 164.
“ “ “	GRAY; Hand List, No. 7523.
<i>Serinus githagineus,</i>	GLOGER.
<i>Erythrothorax githaginea,</i>	CHR. L. BREHM.
<i>Bouvreuil-rose,</i>	OF THE FRENCH.
<i>Trompeter gimpel,</i>	CABANIS.
<i>Papageien gimpel,</i>	C. L. BREHM.
<i>Rosen gimpel,</i>	A. BREHM.
<i>Egyptscher rosen-gimpel,</i>	SCHLEGEL.

Specific Characters.—The small feathers all round the base of the beak rose carmine; rump, external borders of the primaries, and abdomen a most delicately beautiful rose pink; no transverse bands across the wings; the first quill feather the longest in the wing. Length five inches and a half; from carpus to tip three inches and three eighths; the tip of the wing reaching, when closed, within one third of an inch of the end of the tail. Tail two inches and three eighths long; tarsus three quarters of an inch; beak from gape five eighths of an inch; height of beak five twelfths of an inch; circumference of beak at base one inch.

THIS elegant bird is a native of Africa, and has only been known to occur in Europe with certainty in Provence, Tuscany, and the Grecian Archipelago. It is found however at Malta, the bird figured in the "Icones Fauna Italica" having been captured there, and I have a specimen sent me from that island by Dr. Leith Adams. It is seen in the island from December to March, and its designation "The Trumpeter," is derived from its Maltese name "Trumbettier." It is mentioned by Captain Loche among the birds observed by him in Algeria, and is especially found in Nubia and Syria. In Morocco it is recorded by Mr. C. F. Tyndhill Drake, ("Ibis," 1869, p. 152,) who remarks it was so tame that it would fly into his room and pick up stray crumbs from within a few inches of the mattress on which he was lying. He did not observe it anywhere else, except a few at Mogador. The Rev. Canon Tristram ("Ibis," 1868,) states "it is not uncommon in the deserts near Beersheba." A long and interesting account of its residence and habits in the Canary Islands, from which the following history is principally taken, is given by Dr. C. Bolle, in "Naumannia," for 1858, pp. 369-393; and in Cabanis' "Journal für Ornithologie," for 1859, p. 469, a further account of it is given by Chalihl Effendi, as it was found by him in the desert regions of the north-east of Africa, on the banks of the Nile, in Upper Egypt, in the oases of Nubia, where it occurs in large flocks, and in Arabia Petrea.

Salvadori ("Fauna d'Italia") says:—"Its home is Upper Egypt. It appears from time to time in Italy. Nearly every year some individuals are captured in Malta, generally from October to March, (Wright,) which is a very singular statement, since it appears that in this season they ought to be going away into regions nearer the equator, and before that towards the north. It has been said that it is not improbable some may be seen in Sicily. Once it was found in Tuscany by Savi, who, in a letter which he wrote to me, January 17th., 1869, informed me that he believed he was the first to find it in Italy, as in 1839 he took in the spring a fine male with lime twigs not far from Pisa, in a place called Sagainaja. It lived for five years in a cage, and was soon domesticated. Its habitual whistle was similar to a boy's small wooden trumpet. It moulted regularly in summer, but never changed its livery."

Bonaparte, who had a living bird, thus describes its habits in the "Fauna Italica."—"It was very gentle, placid, and domestic, and very sociable with the other birds, sparrows, etc., which came round its cage, picking up the fallen grain, and when they flew away it en-

deavoured with its characteristic trumpet-like voice to bring them back again. Ordinarily it uses another note, which we cannot pronounce otherwise than by the syllable ‘ghe,’ five or six times repeated with vibrations. It lays four or five eggs of a sea-green colour, with reddish brown spots and points arranged in a corona near the larger extremity. It nests in the clefts of rocks.”

Doderlein remarks of this bird, “This is a very elegant species, originally from Africa, which only appears in Italy as an accidental passenger. As it is sometimes taken in Malta, it would not be improbable that some individuals might be taken on the adjacent coast of Sicily. Malherbe certainly asserts that some arrive there, and I saw a specimen in the collection of the University of Titania, which appears to have been taken in the neighbourhood of that city. We want more proof.”

Dr. C. Bolle’s monograph is a model of this kind of descriptive natural history, going into full particulars of all the habits and nidification of a most interesting bird, hitherto generally dismissed by authors with the brief remark, “*Ses mœurs, ses habitudes, son régime et sa propagation sont inconnus.*”

In the early part of his account, Dr. Bolle reprobates the system of name-making in modern days; the present bird being classed by various authors as an *Emberiza*, a *Fringilla*, *Pyrrhula*, *Carpodacus*, *Erythrospiza*, *Erythrothorax*, *Serinus*, or *Bucanetes*!

I have placed it with the two last in the genus *Carpodacus*.

It is truly, as Dr. Bolle remarks, a bird of the Sahara. He writes about it as follows:—“Far beyond the other side of the fruitful coastline of North Africa, which borders southwards the Mediterranean Sea, the cultivated fields of the Arabs are surrounded by a margin of desert, where a new unexplored kingdom, with a scanty but strange world of plants and animals, comes into view. Silence, as of the grave, reigns supreme in the terrible Sahara, where the sea of sand has its waves agitated by the poisonous breath of the Simoon. Through this run the routes of the caravans, and its palm-shaded oases and wady’s, which during the falls of winter are flooded with water, and are adorned with thickets of mimosæ and tamarisks.”

It was in the two Canary Islands, Lanzarote and Fuertaventura, which appear to have been divided from the Sahara by the sea, and bear the character of scenery above described, that Dr. Bolle found the Desert Trumpeter in great abundance, and where his observations upon its habits were made.

“Whoever,” says Dr. Bolle, “wishes to know the dwelling-place of *P. githaginea*, must not expect to follow me, as when I described the

wild Canary bird, into the glades of the Hesperides, through hollows rich in flowers, and bordered with woods of laurel. The Fortunate Islands are in no way similar to the evergreen colour in which they appear to travellers who pass these land-marks of navigation in the height of summer.

“The Desert Trumpeter is found most plentifully in Lanzarote and Fuertaventura, and most sparingly in the great Canary Island. I found it in fact spread over the whole eastern part of the Canary Islands, and have reason to believe that it may inhabit the more western parts also.

“On the 1st. of April, 1856, I found it in an excursion to Caldeca von Bandama, on the high road which leads from Ciudad de las Palmas to the Vegas, and welcomed it joyfully as an old acquaintance one comes upon unexpectedly. It is seen, but less plentifully, in the neighbourhood of the principal town, but at the time of migration it appears in great numbers in the harbour, Puerta de la Luz. I have also observed it in the districts of Jinamar, Carrizal, and Juan Grande, and nowhere more abundantly than in Arguineguin, where it frequents in flocks the tombs and ruins of a town which at one time had been plundered by the Spaniards, which now covers a cape or promontory with rocks and grottoes, and fig-trees in the background, and commands an incomparable panorama over the sea towards the Peak of Teneriffe.

“It also breeds in the islands of the western group, since the thick growth of wood has driven it back there, but it has not been seen hitherto on Teneriffe, Gomera, Palma, or Ferro.”

“The country inhabited by the Desert Trumpeter must above all things be without trees, and in the hot regions of the sunny coast. It prefers stony places, where in the noon-day the wind trembles over burning stones, and by the glimmer and reflected light of which the traveller is almost blinded. Only a little grass grows in summer between the parched and bleached yellow stones; and here and there at wide intervals the low bushes of the taybayba, (*Euphorbia balsamifera*), or the thorny prenanthes, only eaten by the dromedary, spring up. Here the Trumpeter lives—a Bullfinch with the manners of a Stonechat. It is always found in sociable little groups, when the cares of the breeding-season do not keep it solitary. The cheerful little bird dances from stone to stone, or glides about near the ground, but seldom can our sight follow it far into the landscape, for the reddish grey feathers of the old bird mix as closely with the colours of the stones and leafless stems and twigs of *Euphorbia*, as the isabelle of the young does with the pale yellow of the sand or chalk.

"We should soon lose it if its voice, which is one of its most striking peculiarities, did not guide us to it. Listen! A note like that of a small trumpet trembles through the air, and vibrates continuously; and if we are very attentive we shall hear just before and just after it two gentle light notes ringing like silver bells through the still desert, or the almost imperceptible chords of an harmonium played by unseen hands. Again it changes, and this time its notes resemble the deep croak of the green frog of the Canaries, but less coarse, hastily repeated one after another, and which the little bird will itself answer with almost similar but weaker sounds, like a ventriloquist, as though they came from the far distance. Nothing is more difficult than to describe in language the notes of birds. They must be heard to be appreciated, and no one would expect to hear so remarkable a song from a bird in such a locality. The above trumpet-like tones, often ending in a succession of crowing and humming, distinguishes the habitat of these birds. They live almost so completely in the uninhabitable country around, that they are always joyfully welcome, and listened for attentively when silent. They are as the melancholy voices of the desert, or as the Djuns of the solitude. '*Vox clamantis in deserto.*'

"The Desert Trumpeter does not appear frequently on the steep rocky hills, at least I have only once met with it in such a situation, and that was in April, 1852. It is much more partial to the black lava stream of the desert, which, full of gaping rents and chasms, hardly permits a blade of grass to become green. It never settles on a tree or bush like the Stonechat. In inhabited districts they are rather shy, yet where, as in Handia and nearly all the south of Fuentaventura, the silence and solitude of the desert is unbroken, they are very confiding, especially the young, which, when we meet with them unexpectedly seated on a stone, will peer with their little brilliant eyes quite into one's face.

"They feed entirely, or almost so, on the seeds either of grasses, which are found like a mealy kind of bread in their stomachs when killed, or the oily seeds of composite and cruciferous plants, which they shell like other Finches, by moving them most carefully backwards and forwards between the mandibles of their strong beak. They will also eat tender young leaves. They cannot long dispense with water, and often must fly some miles daily to get it. Their presence in the desert is always a good omen for the thirsty traveller. I have constantly seen them flying to drink in flocks. They drink much at a time in long draughts, between which they lift up their heads. After drinking they are very fond of bathing. I have never seen them

roll about in the dust like Sparrows. The breeding-time begins in March, and like those of most true desert birds, the nest is well concealed, and with such foresight, that it can hardly ever be found.

"I have never succeeded in discovering one, though I have many times sought in vain, 'as did Brehm in Egypt, who writes 'In the month of March *P. githaginea* is in breeding-plumage, but I have never succeeded in discovering any more about it. The masses of rock on both sides of the Nile form a very favourable nesting-place, but they extend so much that the naturalist cannot pursue his object with any good result.'

"I know, however, from the goatherds of Fuertaventura, that the Moros, as they are called there, build in crevices under large over-hanging stones upon the ground. The nest has a tolerably strong texture, and is woven with the coarse straw of the desert grass, and lined within with great feathers, mostly of the ostrich and bustard, as well as the wool of the camel and hair of the goat. The number of eggs is from three to five. They certainly breed twice, if not more frequently. The second moult takes place in July. Individuals quite tired have been seen by fishermen flying over the arm of the sea and the islands of the coast. These journeys shew why it appears yearly in Malta as a bird of passage, as this island makes the direct line from the Western Sahara and Canary Islands to the deserts of the Syrte, bordering on the Mediterranean.

"The Desert Trumpeter does not appear to have many enemies in its native home, as with the exception of the wild cat and a few stoats, it has no four-footed foes. The Horned Owl can scarcely find it under the flat stones, and in the cliffs which protect it. It has only to beware of the Kite, (*Milvus regalis*.)"

Dr. Bolle was a long time before he could keep them alive in confinement, but he at length succeeded, and he gives a most interesting account of their habits. He says they are peaceful and gentle, very tame and sociable with each other, or with other birds. The male bird sings in the late autumn and winter. They love company, and constantly call to one another. He kept his birds in a room with plenty of light, and when the lamp was brought in they began their song. The tone is sometimes clear and beautiful, but with a short trumpet, or a prolonged drony or quaking sound, which appears to be the key-note of their song, and to which is often added various modulated tones, sometimes resembling the purring of a cat. The 'ka, ka, ka,' which they constantly repeat, answers, as a rule, one much deeper, softer, and shorter. Rarely they may be heard uttering a low chattering, like the little parrot; they will also cackle like the

hen, ‘kekek, kekek,’ three or four times in succession. Their alarm note is a loud ‘schak, schaok.’ When hunted and caught they shriek with anguish. Their notes are almost without exception so full and expressive, that we wonder how such a small creature can produce them. The female has not the trumpeting tone so loud as the male as in spring.”

“In confinement the first egg was laid on the 24th. of April. They are four in number, rather large for the bird, pale sea-green, or lighter, with small spots and points of reddish brown, thinner at the smaller end, and forming at the larger end a kind of crown or wreath.”

The male bird has the top of the head and nape ashy grey. The back more or less brownish ash-grey, with reddish edges to the feathers; the greater wing coverts pale brownish, edged with rosy red; the primaries are a glossy hair-brown, with their outer edges fringed with rosy pink, their tips being bordered (the first three slightly, the rest more broadly,) with creamy white; in the secondaries the outer border is the broadest, and the cream-colour is more deeply tinged with rosy pink; the tail is emarginate, and the feathers present the same deep brown colour, broadly edged with cream-colour and rosy red, as the wing feathers, so that when the wings are closed, they form, with the tail, a pleasing striped appearance. All the under parts (more or less), the under tail coverts, feathers round the beak, and rump are rosy red, mingled on the crop and abdomen with grey.

Dr. Bolle says that when old, the males have the scapularies speckled with red, and that this colour is much deeper on the back. In autumn the male is less beautiful,—the red is less remarkable, and the ashy grey above, changes into a dull grey brown, on which account, after moulting for the first time, they have a strongly marbled appearance. In this stage a reddish shade on the back is above all perceptible. The beak is a rosy coral colour, which Dr. Bolle says gives it in the distance the appearance of an exotic bird. Tarsi and feet rose; iris brownish black.

The female is above brownish grey, but that colour is lost in the clearer tints below, which from the throat downwards, become exclusively whitish. The upper part of the wings reddish grey. On the throat and immediately under the beak clear rose; tail rosy red; scapularies edged with rosy red. The greater wing coverts and tail feathers like the male, only smaller, and the rose less marked; under tail coverts pale reddish grey; feet paler rose than the male. No bands across the wings of either sex.

The plumage of the young differs somewhat from that of the adult. When it leaves the nest it is clear light colour, or dull

isabelle yellow, which Dr. Bolle says Degland wrongly ascribes to the female. This colour goes downwards from the throat without any streaks, and gradually blends into whitish; there is no trace of red, not even on the almost isabelle yellow tint. The under tail coverts are yellowish; greater and lesser wing coverts, wings, and tail have a darkish brown colour, with a speckled grey yellow on both edges; beak and feet flesh-colour.—(Bolle.)

My figure of this bird is from a male in my own collection. It was sent to me by Dr. Leith Adams, and was killed in December at Malta. The egg is from a specimen sent me by the Rev. Canon Tristram.

The bird has also been figured by Temminck et Laugier, planche color, 400, figs. 1 and 2; Roux, Ornith. Prov., vol. i., supp. plate 73, bis, young male in autumn plumage; Gould, B. of E., pl. 208; Bonaparte, Lox., t. 33.

The following have been by various authors admitted into the European list of *Pyrrhulinæ* :—

1.—*Pyrrhula coccinea*, Selys.—The Greater Bullfinch, (*Bouvreuil ponceau* of the French,) differs in nothing whatever from the Common Bullfinch except in size, and having rather more white on the rump, and the band of this colour across the wings being rather broader. We are informed by Dubois (*Oiseaux de la Belgique*, p. 125,) that it never mixes with the common species. It was first introduced as a distinct race by Vieillot, Dict., 1817, and after by M. le Baron Selys-Longchamps, in his “Faune Belge.” Schlegel, however, in his “Revue Critique,” 1844, declined to admit it as a distinct species, having never seen it in nature. De Selys himself only considered it as a local race of the Common Bullfinch. Degland admits it into his “Ornithologie Européenne,” with the following remarks:—“The size of the *Bouvreuil ponceau* is constantly larger than that of the common species; there is a difference in the proportions of their wing primaries, in the strength of their note, and it is certain that they always flock separately.”

Bonaparte, who admits it into his “Conspectus Avium Europearum,” 1850, and in his “Critique,” p. 27, makes the following remarks about it:—“I would not answer for this not being in reality a constant race or species, evidently that which Graba would have represented in his work upon northern birds.”

Lastly, Dubois admits it as a distinct species, under the designation of *Pyrrhula coccinea*, Leisler, and remarks upon it:—“This bird is in

many respects like the Waxen Chatterer, appearing only from time to time. Sometimes it is not seen for several years, and then shows itself in great numbers. These Bullfinches have their periodical migrations, and unite together sometimes in large, and at other times in small flocks before starting. They have been seen in Belgium in 1836, 1840, 1846, and 1850; but in the autumn of 1855 there was such a number taken, that they might have been bought by the dozen at the game-dealers. Our learned naturalist, M. le Baron Selys-Longchamps, had the honour of being the first to figure this bird in his "Faune Belge," and other naturalists have followed his example. This Bullfinch has been long known as the Great Bullfinch among bird-catchers. Naturalists have confounded it with the Common, although from its size it ought to form a separate species, and it is never known to join the Common Bullfinch when they assemble for their periodical migrations. It is distinguished by a more brilliant red and greater development of the white mark on the rump. The species, according to all appearances, belongs to the north of Europe, but as it has always been confounded with the Common Bullfinch, it is not possible to assign it a fixed locality."

The late Mr. Wheelwright sent me specimens of this bird shot in Lapland. It is a large form of *Pyrrhula vulgaris*.

2.—*Carpodacus longicauda*, Temminck, *P. sibiricus*, Pallas.—This bird was stated by Temminck to have been captured in Hungary, and it is admitted into the European list by Keyserling and Blasius. It is however rejected by Schlegel, Degland, and Bonaparte. There does not appear any authentic account of its occurrence in Europe. It inhabits Eastern Siberia and the Altai Mountains.

3.—*Carpodacus caucasica*, Pallas, *Loxia rubicilla*, Guldenstadt, is admitted into the European list by Keyserling and Blasius, Schlegel, and Bonaparte. The latter says of it:—"The *Loxia rubicilla* of Guldenstadt is a *Carpodacus*; but it is much more strongly formed than *erythrina*, with which in other respects it has less affinity than with *P. roseus*, which is also much smaller." He then alludes to a female in the collection of M. de Selys, about the authenticity of which there is some doubt.

Degland also remarks of this bird, "This genus (*Coccothraustes*) was established by Brisson, and only includes our Hawfinch. The Count de Keyserling, Professor Blasius, and M. Schlegel place in this genus the *C. caucasicus* of Pallas, *Loxia rubicilla*, Guldenstadt. But this bird was only known to the latter naturalist; it resembles in size, form, and coloration the Pine Bunting; it is not certain that it belongs to the genus *Coccothraustes*, and as it is only taken in

the Caucasus, I do not include it in this catalogue, and must refer for a description to the 'Revue' of M. Schlegel, p. 79." This description is that of Guldenstadt, and is very clear and minute.

It appears to be intermediate between the Pine Bullfinch and the Hawfinch, of a soft red colour, variegated with white and grey. It is indigenous to the Caucasian Alps, delighting in the cold regions frequented by the Pine Bunting, especially the beds of gravelly rivers, where it feeds on the berries of the *Hippophaes rhamnoides*. It assembles in flocks, and imitates the notes of the Bullfinch. There is scarcely any difference in the sexes.

"The top of the head, throat, underneath the neck, and chest, intense red, marbled with white acutely triangular spots and streaks; abdomen and under tail coverts weak rose, watered with white; tail feathers below rosy-fuscous. Neck above and back greyish, with a rosy tinge; tail feathers above rosy-fuscous. The base of all the feathers which lie *in situ*, and which constitute the greater part of all the plumage, is intensely grey. The closed wing is an inch shorter than the tail; the primaries and tail feathers are fuscous, indistinctly margined with rose; the axillary quills colour of the back. The tail is three inches and six lines long; the twelve tail feathers brassy-black, the tip of each external margin white, the rest shaded with rose. The thighs are feathered to the knee, and grey; the tarsus and toes, of which there are three before and one behind, of a black colour; claws incurved, acuminate, black, equal anteriorly, the hind one longest. Length eight inches, of wings four inches nine lines, tarsus one inch one line, middle toe nine lines, hind toe five lines."

Figured by Guldenstadt, Nov. Comm. Petr., xix., pl. 12.

I have thought it right to give a translation of the principal part of Guldenstadt's diagnosis of this bird, and regret that I have not a specimen to figure. Although confined as it is to neutral ground, its claims to European rank are very slight.



CRIMSON-WINGED GROSBEAK.

GRANIVORÆ.

Family FRINGILLIDÆ. (Bonaparte.)
Genus FRINGILLA. (Linnaeus.)

Generic Characters.—Beak short, strong, convex, straight, and conic; superior mandible dilated, slightly bent at the point; the upper part depressed. Nostrils basal, round, placed near the forehead, behind the horny elevation of the swollen part of the beak, partly hid by the feathers of the forehead. Tarsi shorter than the middle toe. The two or three first wing primaries tapering, the third or fourth the longest.

CRIMSON-WINGED GROSBEAK.

Fringilla coccothraustes phænicoptera.

<i>Fringilla rhodoptera,</i>	LICHTENSTEIN.
<i>Montifringilla sanguinea,</i>	GOULD.
<i>Erythrositta phænicoptera et</i>	
<i>Rhodopechys phænicoptera,</i>	BONAPARTE.
<i>Rhodopechys phænicoptera,</i>	CABANIS.
“ <i>phænicoptera,</i>	LOCHE.
“ <i>sanguineus,</i>	GRAY; Hand List, No. 7528.

Specific Characters.—Top of the head in the male black; the first two thirds of the outer web of all the primaries, except the first, the feathers round the eyes, and the upper tail coverts, rich crimson. Length seven inches; carpus to tip four inches and three tenths; tarsus ten lines; tail two inches and three fifths; beak seven lines; circumference of beak at base one inch and a half.

THIS beautiful species is closely allied to the Desert Trumpeter, *Pyrrhula githaginea*. It has been included with it and *Fringilla obsoleta*, by Lichtenstein, in the genus *Erythrositta*, in which arrangement he was followed by Bonaparte. Subsequently Cabanis placed this

bird in a new genus, that of *Rhodopechys*, in which he was also followed by the versatile Prince of Canino. It differs, however, from the Bullfinches in the size and form of the beak, and belongs, I think more strictly to the genus *Coccothraustes*, although here again the form of the wing is different.

Bonaparte says of it in his "Conspectus Avium Europearum," p. 28:—"This elegant *Erythrospiza phoenicoptera*, which does not differ from the *Fringilla sanguinea* of Gould, from the confines of Persia and Circassia, claims its place in the ornithology of Europe, which it can always ensure by a few movements of its wings. It is essentially sedentary, only changing from plains to mountains."

In addition to the above places, Erzeroum may be mentioned more particularly as a locality, in the neighbourhood of which place it is found in flocks of five or six. It occurs also in the southern parts of Africa.

In its habits it very much resembles *P. githaginea*, living among rocks and stones in the desert, and feeding upon seeds.

The male in breeding plumage has the top of the head black; the nape, back, scapularies, and wing coverts rich chesnut brown, cheeks, throat, and flanks, being a brown of a lighter shade. Wings black, with the first two thirds of all the primaries, except the first, rich crimson, the secondaries being broadly tipped with very pure white; upper tail coverts crimson; tail black, with the exception of the most external on each side, which are pure white; all the other quills more or less tipped with white. The feathers surrounding the eyes crimson; the crop and abdomen fawn-colour, with the feathers covering the thighs white; under parts of the wings at the shoulders bordered with crimson; the rest of the upper part white, below slaty brown; tail, when closed, white, being covered by the two external feathers. Feet brown; beak yellow.

The female has the upper part of the head brown, with all the other upper parts different shades of the same colour, only a slight vestige of the crimson colour of male being perceptible; the primaries and secondaries dark brown, the former slightly edged with crimson, and the latter tipped with dirty yellow. Throat, cheeks, crop, and flanks nutmeg brown; abdomen dirty-mottled white and brown.

The figures of this beautiful bird are from specimens kindly sent me by Mr. Gould. The male is from Erzeroum. The female was also shot in the breeding season.



SERIN FINCH.

GRANIVORÆ.

Family FRINGILLIDÆ. (Bonaparte.)
Genus FRINGILLA. (Linnæus.)

SERIN FINCH.

Fringilla serinus.

<i>Fringilla serinus,</i>	LINNÆUS. TEMMINCK.
<i>Pyrrhula serinus,</i>	SCHLEGEL. DEGLAND.
“ “ “	KEYSERLING ET BLASIUS.
<i>Serinus flavescens,</i>	GOULD. BONAPARTE.
“ <i>brumalis,</i>	STRICKLAND.
“ <i>hortulanus,</i>	KOCH.
“ <i>meridionalis et islandicus,</i>	BONAPARTE.
<i>Serin Finch,</i>	LATHAM; Syn., vol. iii, p. 296.
<i>Serin cini,</i>	OF THE FRENCH.
<i>Gemeiner grüngimpel or girlitz,</i>	OF THE GERMANS.
<i>Verzellino,</i>	SAVI.
<i>Raperino, Verdolini, Serino d'Italia,</i>	STOR.
<i>Crespolino,</i>	OF THE TUSCANS.

Specific Characters.—The back olivaceous, marked with longitudinal blackish spots; vertex pale olivaceous yellow; primaries and tail feathers dusky brown. Length four inches and a half; carpus to tip two inches and seven eighths; tarsus nine lines; beak four lines.

THE Serin Finch is an inhabitant of Southern Europe. It is found plentifully in Spain, the south of France, in Italy, Greece, in that part of Switzerland which borders on Italy, and more rarely in the south and south-west of Germany. It is also found in Central Germany, in the north of France, and in Holland; but Naumann says it is not found in the north of Germany. According to Faber, it has been found and killed between 66° and 67° of north latitude. It has

also been found in the Hertz Mountains, and, according to Bechstein, it is often seen in Thuringia. Dr. Leith Adams informs me that it is an autumn visitor at Malta, is common in Sicily, and very common in Smyrna. Naumann remarks as worthy of notice that the Serin Finch is not equally plentiful in the same country, and Schinz writes to him that he has never procured it in the Canton of Zurich, though they are common a four hours' journey out of it. They are said to be plentiful in the neighbourhood of Heidelberg and Offenbach, but in the country between very rare. Count Mühle says it is very common in Greece, in company with Finches and Linnets, and that its colours are in that country very bright. Captain Loche includes it among the birds of Algeria; and Mr. Salvin ("Ibis," vol. i., p. 313,) says that it is common about the olive-groves of Sousa, in the neighbourhood of Turin, but rare in the more elevated and mountainous parts of the Eastern Atlas.

A special interest attaches to this bird in consequence of its having been recently captured in England, but as it has not hitherto been figured as a British bird, it comes into my list. The account of this capture will be found related by Mr. Bond, in the "Zoologist" for 1860, p. 7105. One specimen was said to have been caught in a clap-net on the 20th. of June, 1859, near Brighton; and a second near London, in October, 1859, shortly after a severe storm. Mr. Rowley also ("Ibis," January, 1861,) alludes to other specimens having been taken near Brighton.

The Serin Finch is generally a migratory bird, quitting its summer and breeding ground in October, and returning the following March; but in the mild climate of the Rhine, Naumann tells us it remains all the year round.

It lives most frequently in fruit-gardens, orchards, or avenues of walnut or nut-trees, and vineyards; more rarely in oak and beech woods, and loves to dwell among willows and alders, on the banks of brooks and rivers, as well as in garden-trees in the middle of villages or near buildings. Naumann, from whom I am now quoting, further remarks that wherever it lives in summer, it makes itself known by its restless habits, and its custom of always singing on the summit of the tree tops, from which it often flies down to the roofs of buildings. In autumn it is more retired, but remains long on the thick tree tops.

It seeks its food principally on the ground, on which account it is often seen there, but never very far from trees and bushes, and still less in the open fields. It does not seem to like fir or pine woods. In its movements it is very lively and active, springing from branch

to branch, very much like the Siskin or Common Linnet, and it willingly associates with these birds, particularly the Siskin. They are generally seen in pairs or small flocks, and the pairs do not seem to separate during the whole year, but "cling to each other with the utmost affection and tenderness." If one is accidentally separated from the other, they call assiduously until they are again united.

The male is very lively in the beautiful spring weather, and sings continually from the tops of the trees, and delights especially in flying from one to the other, sometimes soaring and sometimes fluttering aloft, and flying straight down again like the Tree Pipit. In its usual flight it resembles the Siskin, moving quickly from place to place, and uttering its peculiar note, which has been compared to that of the Siskin, the Goldfinch, and Canary-bird. The song has much variation, and may be heard at the breeding-place all day long, and from March till far into August. It is a favourite cage-bird, assorting by choice with Siskins, Goldfinches, and Canaries, and it may, like these birds, be taught many performances.

Like other Finches, the Serin feeds on seeds, especially those grown in gardens, and it prefers the oleaginous to the farinaceous. Naumann mentions particularly cabbage, hemp, and poppy, rape, turnip, radish, and lettuce seed, for which it lays contributions on the cultivator, and for which it is doubtless often shot and trapped. The wild seeds which it seems to prefer, are dandelion, hawk cabbage, chicory, the grasses, and even, when driven to it, oats. In autumn it seeks its food among the alders and birches.

Its nest is much more frequently found on fruit and walnut-trees than on beech, oak, or alder. It is in position more like the nest of the Goldfinch than the Linnet, placed in a forked bough, not very high, or in the lowest branches; in bushes and dwarf fruit trees, but not in low bushes. The nest is sometimes like that of the Goldfinch, at others more like the Greenfinches, but smaller, very narrow, rounded, and lined with more skill than the latter. It is formed of small roots, woven together with old twigs, which are, however, sometimes wanting. The inside is tolerably deep, and made soft and warm with feathers, and generally a large quantity of horse-hair, and single pigs' bristles, which secure a smooth resting-place for the eggs, and make, as Naumann justly remarks, one of the prettiest of nests.

The eggs are about the size of the Siskins', but shorter and rounder, very tender-shelled, and in colour resembling the Linnets', having a ground of greenish white, with solitary dots and short streaks of a dull or dark blood red, or reddish brown, forming a kind of wreath oftentimes round the larger end. They sit fourteen days, and this

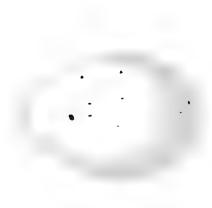
duty is performed entirely by the female, while the male often feeds her most tenderly from his crop.

Salvadori (*Fauna d'Italia*) writes of this bird:—" *Fringilla serina* makes its nest upon trees a short distance from the ground. The nest is constructed externally of dry sticks, and soft roots and wool internally. The eggs, in number from four to five, are whitish, with brown and rosy spots on the obtuse end."

The late lamented Mr. Edward Tuck, of Wallington Rectory, near Baldock, Hertfordshire, who took a great interest in the progress of my work, wrote to me an account of his observations of this bird in the south of France, and promised to send me the nest and eggs. The fatal disease, however, which took him to the sunny climate of the south of France, has since then terminated fatally; and it is with a melancholy interest I record an extract from one of his letters, which displayed not only considerable knowledge of natural history, but powers of observation, which would, had he been spared, have done much good to the science in the pursuit of which he was so fond. The letter is dated June 15th., 1859:—

"I have lately returned from Cannes, where I passed several months of the winter; but I am sorry to say have met with very little indeed in the ornithological way....Provence is generally a very dry and barren country, and you only find birds in the valleys, on the borders of streams. With regard, however, to the Serin Finch, *F. serinus*, I found that some wintered in Provence. I heard the song two or three times in December, and obtained a specimen in January. They begin to sing again about the middle of February. By the middle of March their numbers had greatly increased by arrivals, and they were extremely abundant all along the edges of the pine woods, with which all the higher ground of the country is covered. They evidently frequented the borders of cultivated ground more than the interior of the wood. The males were then in full song. From the middle of March the numbers gradually lessened till there were only some pairs left here and there breeding.

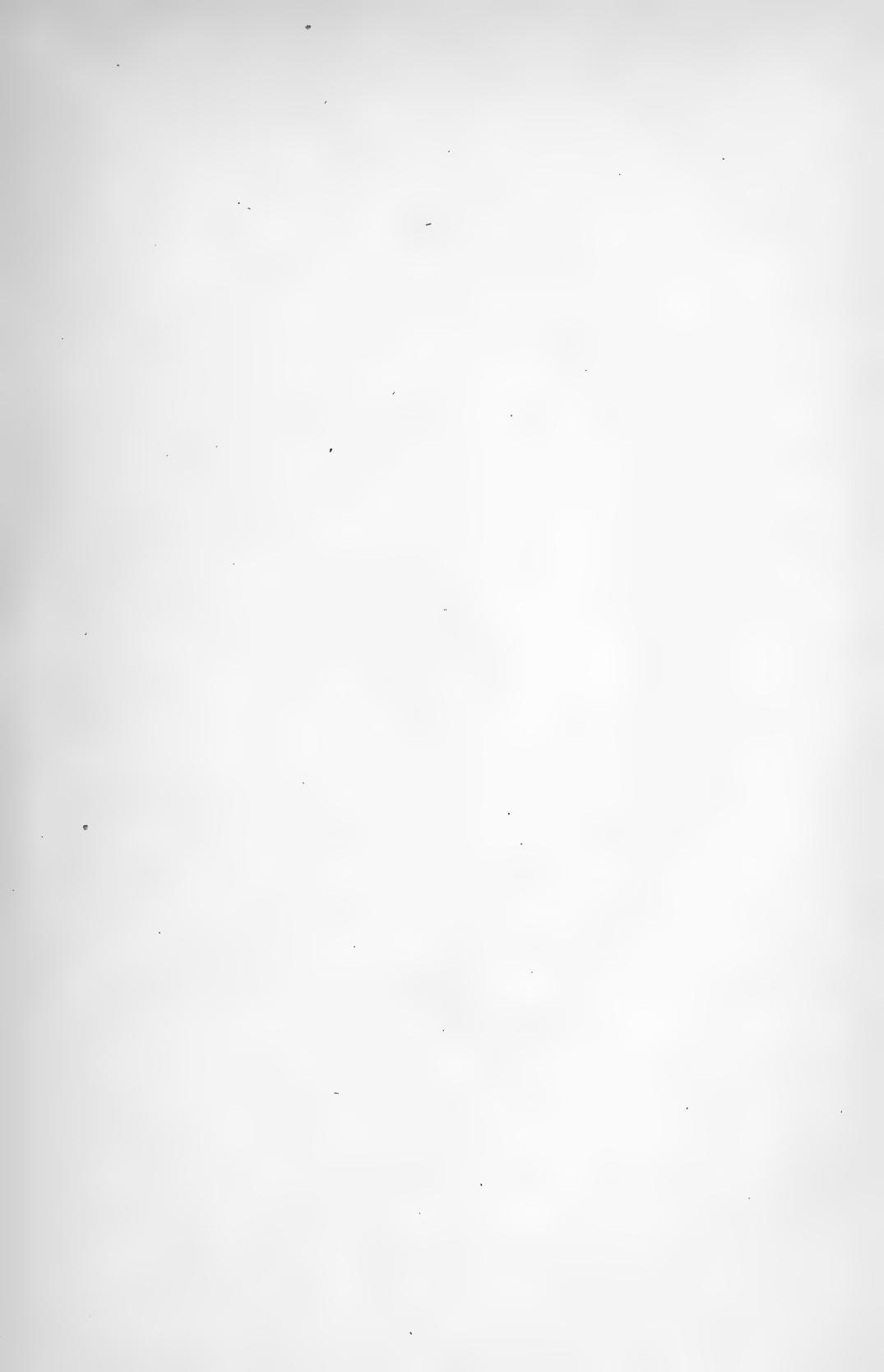
"They build chiefly in gardens, more so than in pine woods. The nest is always on a pine or cedar, from six to sixteen feet from the ground. On the 14th. of April I saw some young Serins out of the nest, but they could not fly; and on the 26th. I took a nest containing only two fresh eggs. On my way home, I stayed some days at Fontainebleau. I certainly did not hear these birds there, though the gardens round the palace seemed suitable for them, and I was shewn the skin of one said to have been obtained there. The Serin Finch is not found in Madeira. I have seen it at Cintra, near Lisbon, in June, but they are never numerous there."



1. SERIN FINCH.

2. CITRIL FINCH.

3. SNOW FINCH.



In Bädeker's work upon European eggs, I find the following remarks about this bird by Brehm:—"The Serin Finch inhabits the south of Europe, Asia Minor, and North Africa. In Germany it removes in a remarkable manner towards the north. I saw it at Nuremberg in 1830, and for three years at Jena and Dresden. It comes into the south of Germany during the first fortnight in April. The half-bowl-formed nest is made of grass and stalks of plants, and lined with feathers and hairs. Many also use the catkins of the willow upon the under layer, whilst others are made almost entirely of rootlets, and some build almost exclusively of the clustering blossoms of the chesnuts. It lays in May five eggs, which are similar to those of *F. citrinella* in size and markings. The ground-colour is pale green, having at the narrow end faint reddish grey spots, in the middle brown, while, at the greater end, the small streaks and dots are black brown."

Savi's interesting account does not differ from those I have given. It appears in Tuscany in flocks in April.

The male in breeding plumage has all the upper parts olivaceous, with longitudinal black markings; the vertex, throat, crop, and an imperfect collar round the neck, greenish yellow; the nape mottled yellow and olivaceous; the lower part of the body and flanks dirty white, the latter being marked with longitudinal brown spots. The wings are crossed with two narrow yellowish white bands. Primaries and tail quills brown, bordered lightly with dirty white; the rump is clear canary yellow; beak horn brown above, whitish below; feet and iris brown. In autumn the colours are less pure.

The female has less yellow in its plumage than the male, more black above, and more brown spots below.

Before the first moult the young are variegated with grey and yellowish, with elongated brown markings.

My figures of the bird and its egg are from specimens in my own collection.

The bird has also been figured by Buffon, pl. enl. 658, (male;) Roux, Ornith. Provence, pl. 94, (male and female;) Bouteille, Ornith. du Dauph., pl. 34, fig. 4; Gould, B. of E., pl. 195; Temminck, Atlas du Manuel; Vieillot, Galerie des Oiseaux, pl. 62, et Faune Franc., pl. 38, fig. 1; Naumann, Vogel Deutsch., vol. v, pl. 123.



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in those parts of Asia and Africa which abut on the European border. Captain Loche says it occurs only accidentally in Algeria.

Thus limited to the southern parts of Europe, the Citril Finch is nevertheless a true Alpine bird, living not only among the smaller hills, but frequenting the highest Alpine Mountains as far as the arboreal region extends. It is found, says Naumann, in the upper dark forests which are broken here and there by open plains overgrown with grass, and rocky precipices. Count Mühle says it is rare in Greece everywhere except in the mountains. Lord Lilford (*Ibis*, 1860) says the Citril Finch is "common in Corfu and Epirus in summer."

Salvadori (*Fauna d'Italia*) writes of this bird, "In spite of all Malherbe has asserted about finding this bird in Sicily, it has been denied by Doderlein and Benoit. Cara says it has been found in Sardinia, where I think I may affirm decidedly that it has never occurred. In high Italy it has been observed in Piedmont, Lombardy, Venetia, and the Tyrol, and comes there regularly every year. The noble Ernest Tarati wrote to me that at his seat in Lombardy he has taken eight or ten individuals in the space of twelve years, and always in September.

"According to Durazzo it ought to arrive sometimes in Liguria, especially on the eastern coasts. It has never, according to Doderlein, been observed in Modena. Bettoni and other Venetian authors affirm that it sometimes nests in Lombardy and Venice, but this is not well ascertained. In the Tyrol, according to Althammer, it is only found irregularly in its passage. According to Bailley (*Orn.*, p. 213) it lives stationary among the mountains of Savoy and upon the southern slopes of Moncenisio, and, according to Riva (*Orn. Tran.*, p. 291), upon the Swiss Alps. According to Bailley, it has a mild and confiding disposition. It lives in the pine forests, from which it often descends in the severe parts of winter. It feeds on seeds and buds. It nests upon the thick foliaged trees, and especially upon the fir trees. The nest is made externally of lichens, moss, and dried sticks, intertwined with spider-webs, and internally with soft filaments and horse-hair. The eggs, in number from five to six, are of a clear blue, with obscure spots and points scattered over."

Doderlein (*op. cit.*) says of this bird, "This species is very rare in central Italy. It is generally confined to the thick alpine groves, and is never seen in the plains. It seems that it has never been noticed in the Modenese territory; at the same time specimen-hunters in the mountains would have agreed to note its presence or absence. According to Malherbe, *Il venturone* sometimes appears near Messina in winter, and also more frequently near Palermo. When I have been in Sicily

I have never happened to meet with it, nor do I know from others that it has occurred there. It is a question whether it occurs in Sardinia."

The following account of its habits is from Naumann:—It is a cheerful restless little bird, very active in its movements, and somewhat shy. It seems always full of joy, and is constantly heard even in bad weather, or in the middle of alpine snow and storms. It is never known to stay long in the same place; and appears in constant motion, turning its tail from side to side, hopping or fluttering among the boughs of the trees, or on the earth when it seeks its food; its spring is quick, its deportment fearless. In all this its affinity with the Siskin is remarkable. It resembles it also in its flight, especially that of passage. It seems alike indifferent to weather or temperature, and only departs from its mountain home, when the ground is frozen, and there is a deficiency of food.

Its note is a gentle piping, described by some as 'gu,' by others as 'qjiul' or 'qjiub.' This call is heard frequently as it flies or immediately after settling. The song of the male is variously described. Bechstein compares it to that of the Canary bird, but says it is not so shrill—something between a Canary bird and Tree Pipit. Schinz compares it to the song of the Siskin. It is really a loud, clear, pleasant song, which may be constantly heard at the breeding-season, from March to September. The female also sings a little, but not so loud as the male.

Many agreeable qualities combine to make the male Citril Finch a favourite cage-bird, and it is kept by amateurs in great numbers. It becomes domesticated quickly, is easily tamed, and not difficult to keep even for a long time. It feeds principally on the seeds of firs or pines, and on those of many alpine plants, and also destroys buds and blossoms, though probably it does this, like the Goldfinch, in search of insect larvæ. In confinement it is fed, like other Finches, on poppy or hemp seed, but with the last it gets too fat, which must not consequently be made its principal food.

It nests in the mountains of the countries above named, in the Tyrol, and in many places in Switzerland on the southern Alpine chain. The nest is sometimes placed in the thick stumpy alpine firs or other pine trees, sometimes under the roofs of the herdsmen's cottages. It is cup-shaped, and very well and skilfully woven together. It is made of dry grass, with moss and twigs more or less intertwined, is tolerably smooth on the outside, and very beautifully lined with many hairs of various animals, small feathers, and husks of the poppy.

The eggs are four or five in number, and in form and colour very

similar to those of the Goldfinch. They are, however, much smaller. The ground-colour greenish blue, with variously-sized dots of reddish grey and blood red, chiefly at the larger end.

According to M. Crespon, it will breed with the Serin Finch.

The male in breeding plumage has the top of the head and back olive green; nape and sides of throat grey; rump, throat, and all the under parts citron yellow; wings and tail dark brown; the primaries lightly and the secondaries broadly tipped with ashy white; two oblique bars of olive green across the wings. Beak brown; feet reddish; iris clear brown.

The female has the plumage browner, with less of yellow below, and the wing bars are whitish.

According to Degland the young before the first moult have the upper parts of a russet grey, with a longitudinal black spot in the centre of each feather; the inferior parts russet white, with a number of brown spots, distinct, but less pronounced on the middle of the abdomen; wings of a blackish grey, with the coverts broadly bordered and tipped with light yellow ochre, forming two transverse bands, one on the middle, the other on the lesser coverts; primaries brown, bordered and tipped with grey; tail quills equally brown, bordered and tipped with ashy white.

My figure of this bird is from a specimen sent me by Canon Tristram. The egg is from my own collection. It was taken in the Canton Uri in Switzerland, and sent me by the late Herr Seidensacher.

The bird has also been figured by Temminck, Atlas; Vieillot, Faune Franc., pl. 40; Roux, Ornith. Prov., pl. 90, (male;) Naumann, Vogel Deutsch., pl. 124; Bouteille, Ornith. du Dauph., pl. 35, f. 3; Gould, B. of E., pl. 198.

GRANIVORÆ.

Family FRINGILLIDÆ. (Bonaparte.)
Genus FRINGILLA. (Linnaeus.)

SNOW FINCH.

Fringilla nivalis.

<i>Fringilla nivalis,</i>	BRISSON.
“ <i>saxatilis,</i>	KOCH.
<i>Passer alpicola,</i>	PALLAS.
<i>Plectrophanes fringilloides,</i>	BOIE.
<i>Chlorospiza nivalis,</i>	KAUP.
<i>Montifringilla nivalis,</i>	BREHM. BONAPARTE. GRAY, Hand List, No. 7251.
<i>Pinson de Neige des Alpes,</i>	OF THE FRENCH.
<i>Alpen Schneefink,</i>	OF THE GERMANS.

Specific Characters.—Wing coverts, the chief part of the secondary quills, and all the tail feathers, with the exception of the two middle ones, of a pure white. Length six inches and two fifths.

THE Snow Finch is an inhabitant of the highest mountains of Southern Europe, namely,—Switzerland, south of France, the Pyrenees, the Apennines, and the Caucasus. It is found also in the Tyrolese Alps, and occasionally, while on its passage to the north, in Thuringia and Anhalt. In the north of Europe it is rare. It has, however, been taken in Sweden according to Nilsson, though he only mentions a single capture: and it is equally rare in Siberia. It occurs in the high mountains of Persia, and is found in North America. Dr. Leith Adams informs me that it is common about Candahar, so that it has a wide and extensive range. In Switzerland it is found in the highest mountains in the regions of everlasting snow, descending to the lower







SNOW FINCH.

parts only when driven by storms; and in the spring of the year it is found in the higher alpine valleys. In summer it still prefers the most desolate places, where it is seldom disturbed by its enemy, man; such as the Usfernthal, the desert regions of the Gumsel and the Simplon, and in the neighbourhood of the convent of St. Bernard, where it is found all the year.

Salvadori (*Fauna d'Italia*) writes, “*Fringilla nivalis* remains stationary, and nests on the summits of the Alps and the Apennines, from which it descends in winter to the borders, but never into the plains. It has not been observed in Sicily, Sardinia, nor Malta. Upon the Apennines I do not know that it has ever been seen lower than central Italy, where I have found it upon the mountains of Ascolano, (*Ibis*, 1864, p. 128,) and Tristam on the Apennines between Bologna and Tuscany, (*Ibis*, 1863, p. 362.)”

According to Savi, the inhabitants of the houses on the summit of Monceniso must capture many of these birds which fly in their neighbourhood, and pick up the fallen grain from the roads, having in fact all the habits of the Common Sparrow. In the mountains of Ascolano, on the contrary, they live in desert places. They nest among fissures of the rocks as well as the holes of the houses. The eggs, in number from four to five, are of a pallid green colour, with a rosy very indistinct spot. (The colour is white, each end being more or less pointed, and the *very* few rosy spots now and then observed are distinct enough, but far between.—C. R. B.)

Doderlein (*op. cit.*) says that this bird only occurs in Modena during severe winters, and then only accidentally. It has never occurred to his knowledge in Sicily.

Naumann says that the Swiss naturalists consider there are two species or permanent varieties, one living always in the Swiss mountains, the other in the south of Germany; but he does not agree with this opinion, considering the idea has originated in the well-known migratory habits of the bird.

The Snow Finch lives during summer, and in a great part of the year where no trees grow; it is therefore seen on the ground, stones, and walls or roofs of buildings. It is a cheerful, restless, and vigorous bird, resembling in its habits the Mountain Finch and Chaffinch, and like them it runs and hops on the ground, and has a similar flight, in which its beautiful plumage is well displayed. It is generally considered a very shy bird, but the Swiss naturalists say that in their mountains it is less wild, though ever cautious. It is sociable with its kind, and is seldom seen alone, except during the breeding-season. When startled, it flies up high in the air, and seems to go far away,

but it usually makes a circuit and returns to the same spot, where it settles upon the ground.

Its call, which is heard during flight, is a peculiar piping, short, broken note, compared by Schinz to the syllables 'tri, tri, tri.' Bechstein says that its call is a loud and clear 'kip, kip,' like that of the Crossbill. It will also in confinement sing the notes of the Mountain Finch, and it is not easily tamed.

It lives upon seeds and insects, preferring of the first those that are oily, and of the latter beetles and grasshoppers, moths, etc. In winter its food is by necessity confined to the seeds of alpine plants—fir and pine trees, and, like our Sparrows and Finches, it may be seen feeding among the dung of horses, and it will even in inclement seasons venture into the cloisters of St. Bernard to pick up grains of rice or anything it can get. Schinz tells us they are always in good condition and very fat in summer. In confinement they will do well on rape and hemp seeds, but will also eat those of the fir, which they seem to like much. They also feed upon the seeds of several grasses.

The Snow Finch breeds only in the highest regions of the highest mountains, where the growth of wood has ceased, and near those dreary and desolate spots where the snow has never melted since the mountain was upheaved from the bowels of the earth. Yet it hath pleased Him, without whose knowledge not a Sparrow falleth to the ground, to locate here one of the most beautiful of His created things; and as the weary traveller seeks among these wild and inhospitable regions the records of a past history in the world—and is full of that deep and indescribable feeling which the sublimity of such a solitude creates within his mind—he is charmed and delighted by the chirp or the flutter of this lonely denizen of the Alps, which proclaims to him by its presence there—by its adaptation to its existence—by its distinct individuality—that it had a special creation and a special position assigned to it in the great scheme of nature.

The nest of the Snow Finch is placed on the rocks, between stones, in fissures of the rocks, or in holes, as well as in the balconies and under the roofs of the hospitals of the great St. Bernard and the Simplon. It begins to build in May, and has probably only one brood in the year. The nest is made of dry grass, stalks, and moss, and lined inside with feathers or hairs. It contains from four to five eggs, which are very similar to those of other Finches. The ground-colour is pure white, with an occasional minute brown dot.

The young are fed upon insects, and are taken off into the snow, even to the highest regions, by the old birds.

The male in breeding plumage has the top of the head and neck

of an ashy colour, running into bluish; back and scapularies brown, shaded with russet on the borders of the feathers; upper tail coverts partly white and partly black, with their edges russet; the inferior parts are white, washed with ash on the crop and neck, with a large black spot on the throat; abdomen white; under tail coverts white, with some brown spots at their extremity. Wings black, with a large white longitudinal band formed by the wing coverts and the greatest part of the secondary quills; the primaries bordered on the outside, and tipped with russet grey; the two middle tail feathers black, bordered with russet grey; the others white, tipped with a slight black spot bordered with russet; the most external feather on each side entirely white; beak black; feet and iris brown.

In autumn the colours of the male are browner above, the black mark on the neck less extended, and the borders of the feathers which form it ashy; beak yellowish, and the feet of a darker brown.

The female does not differ from the male, except by the ash-coloured head, which runs into russet, and the absence of the black mark on the neck.

The young before their first moult are above and on the sides of the head and nape of an ashy brown, with the feathers broadly bordered with russet; back and scapularies brown, with the feathers bordered with red; front and sides of the neck ashy white; crop, abdomen, and under tail coverts of a russet white; the white feathers of the wings and tail washed with an ochreous red on their borders; the black feathers of the same parts bordered and tipped with russet; beak saffron yellow; feet russet brown.—(Degland.)

The egg is from my own collection. It was taken on St. Gothard, June 20th., 1867, and sent to me by Dr. Meves, of Stockholm.

Figured also by Buffon, Brisson, Wilson, Temminck, etc. By Roux, Ornith. Prov., pl. 89, (male in winter plumage;) Bouteille, Ornith. du Dauph., pl. 35, fig. 1; Naumann, Vogel Deutschlands, pl. 117; Gould, B. of E., pl. 189.

GRANIVORÆ.

Family FRINGILLIDÆ. (Bonaparte.)
Genus FRINGILLA. (Linnæus.)

ALPINE SERIN FINCH.

Fringilla pusilla.

<i>Fringilla pusilla,</i>	GMELIN.
“ <i>aurifrons,</i>	BLASIUS.
“ <i>rubifrons,</i>	HAY.
“ <i>parvirostris,</i>	GMELIN; in M.S.
<i>Passer pusillus,</i>	PALLAS.
<i>Serinus pusillus,</i>	BRANDT. BONAPARTE.
<i>Pyrrhula pusilla,</i>	DEGLAND. DE SELYS.
<i>Metoponia pusilla,</i>	GRAY; H. L., No. 7200.
<i>Moineau des Alpes,</i>	OF THE FRENCH.
<i>Alpensperling,</i>	OF THE GERMANS.

Specific Characters.—Rump grey, spotted with blackish; abdomen dirty white; primaries bordered with yellow in the adult, and with white in the young. Length about four inches and a half.—DEGLAND.

THIS species is said by Pallas to be common in the Caucasus and the borders of the Caspian Sea, to which it goes in spring from the high mountains in common with *Fringilla nivalis* and *Sylvia erythrogaster*, which come down in winter from the alpine regions of Persia.

The following is the description given by Pallas:—"Forehead testaceous red; vertex black. Neck and back grey, with the middle of the feathers fuscous; abdomen and under tail coverts white. Feet black; beak fuscous."

The above description is thought by De Selys-Longchamps to apply only to the young in the winter plumage. In the "Revue de

Zoologie" for 1847, page 120, this distinguished naturalist has given the following more extended diagnosis of the adult bird:—Top of the head, auditory region, and throat, of a dull black, with the forehead of a bright and lively red; nape, upper parts of the body, and upper tail coverts, grey; the centre of the feathers blackish, having the borders of a saffron yellow or grey white; the parts below dirty white, with longitudinal blackish spots on the flanks and under tail coverts, the whole irregularly washed with saffron yellow; wings blackish, the lesser coverts broadly bordered with saffron yellow; primaries slightly bordered with this colour, and the secondaries with grey white; tail blackish, with the end lightly bordered with grey white; beak brown; feet black.

Figured by Pallas, Zoog., 1811-31, vol. ii., p. 28.

I have not a specimen or good drawing of this bird, which I therefore am sorry to say cannot be figured.

GRANIVORÆ.

Family FRINGILLIDÆ. (Bonaparte.)
Genus FRINGILLA. (Linnæus.)

HOLBOLL'S REDPOLE.

Fringilla holboelli.

<i>Fringilla holboelli,</i>	BREHM.
“ <i>canescens,</i>	DE SELYS; Faune Belge.
“ “	SCHLEGEL; Revue.
“ <i>borealis,</i>	TEMMINCK; Man., 1835.
“ “	KEYSERLING AND BLASIUS; Die Wirbelthiere Europa's.
<i>Linaria canescens,</i>	GOULD. DEGLAND.
“ <i>holboelli,</i>	BREHM.
<i>Acanthis holbollii,</i>	BONAPARTE.
<i>Ægiothus holboelli,</i>	CABANIS.
<i>Carduelis holboellii,</i>	DUBOIS.
<i>Siserin Grisatre,</i>	OF THE FRENCH.
<i>Grauer Leinfink,</i>	OF THE GERMANS.

Specific Characters.—Rump pure white in all seasons, except in the breeding season, when it has in the male a rose-red tint; tail six cents and a half, equal about to two inches and three fifths. Length five inches and three fifths.—DEGLAND.

THE Lesser and Mealy Redpoles are included in our British lists, both of them being frequently taken in this country. Mr. Gould has, however, figured a variety in his "Birds of Europe," which is considered by some to be only a variety of *F. borealis*; and Mr. Morris, in his "History of British Birds," has figured the Mealy Redpole under Gould's name of *Linaria canescens*.

As long ago, however, as 1842, M. de Selys-Longchamps, in his "Faune Belge," p. 73, remarked that "*F. borealis* must not be con-



HOLBOLL'S REDPOLE.

founded with *F. canescens*, which differs always from it, in that the whole rump is of a pure white above, but it has a much stronger make, a very long tail, and the ground colour of the plumage white, tinted with brown."

This species inhabits Greenland, and is found occasionally in Belgium and the north of France.

M. Dubois, in his "Planches Colorées des Oiseaux de la Belgique," a work which I have before had occasion to speak of with favour, has the following notice of this bird, which I take the liberty, with the author's kind permission, to transcribe:—"The Tarin d'Holboll is very rare, and we have only very vague and very imperfect accounts about it. We are ignorant of its true country. It is only known that it comes from the north, and that it appears in Germany and Belgium. Nothing is known about the habits and nidification of this bird, but they probably do not differ from other species of the same genus. It is distinguished from its congeners by the body and beak being stronger, and the greater length of the wings. Many naturalists have made a special genus for this Tarin and the two other European species, but we cannot admit this distinction, as these Tarins do not differ in anything but the colour of the plumage.....The figures are taken from two specimens in the collection of M. de Selys-Longchamps."

The male has the vertex and forehead blood-red; upper parts of neck and body whitish, with longitudinal blackish marks; rump, front of neck, and chest, rose-red; rest of the under parts white; ear coverts and throat black; primaries and tail feathers brown, edged with pure white; beak yellow below and brown above; feet and iris brown. The female is like the male, but without red on the neck or chest; the lower part of the body white, with brown streaks on the sides.

Male and female in winter have the ground colour of the plumage white, tinted with brown; rump pure white, and the black of the ear coverts and throat dull. The young before the first moult are unknown.—(Degland.)

My figure is taken from the male in Dubois' plate, which I have selected as being a good drawing of the specimen referred to in De Sely's collection.

It has also been figured by Gould, Birds of Europe, 193?

The following members of the genus *Fringilla* require a word or two of notice:—

Fringilla incerta, Risso, (*Chlorospiza incerta*, Bonaparte,) is only the young or female of *Pyrrhula erythrina*.

Fringilla brevirostris is not considered by Mr. Gould to belong to the European fauna, all the specimens which have fallen under his notice having been captured in Asia.



FIG. 2. SPARROW.

GRANIVORÆ.

Family FRINGILLIDÆ. (Bonaparte.)
Genus PASSER. (Brisson.)

Generic Characters.—Beak short, slightly convex, and curved at the tip, the border of the upper mandible slightly overlapping the inferior. Wings medium size, the second primary the longest. Tarsi nearly as long as the middle toe; claws sharp and curved; tail nearly square, and of medium size.

ROCK SPARROW.

Passer petronia.

<i>Passer petronia,</i>	SCHLEGEL. DEGLAND.
“ <i>sylvestris,</i>	BRISSON.
<i>Fringilla petronia,</i>	LINNÆUS. GMELIN. LATHAM.
“ “	KEYSERLING AND BLASIUS.
“ “	TEMMINCK. SCHINZ. NAUMANN.
<i>Coccothraustes petronia,</i>	CUVIER. LESSON.
<i>Petronia rupestris,</i>	BONAPARTE.
“ <i>diredema,</i>	MÜLLER.
<i>Moineau Soulcie,</i>	OF THE FRENCH.
<i>Steinsperling,</i>	OF THE GERMANS.
<i>Passera Lagia,</i>	SAVI.
<i>Ring Sparrow, Foolish, Speckled,</i>	
<i>and White-tailed Sparrow,</i>	LATHAM.

Specific Characters.—The tail is large; each of the tail feathers, except the two middle, marked with a round patch of white on the extremity of the inner web; under tail coverts fawn-colour, with a round patch of white at the extremity of each feather. In the adult there is a band of yellow across the neck anteriorly. Length six inches; carpus to tip of wing four inches; tail two inches and a half; tarsus nine lines; beak eight lines long, and one inch and a fifth in circumference at its base.

THE genus *Passer* is well marked, and has been established ever since ornithology was a science. Notices of it may be found in the writings of Gesner, Willoughby, Aldrovandus, and Ray, and it was finally determined by Brisson, in his "Ornithologie," published in 1760. Cuvier suggested the name of *Pyrgyta* instead, and in some few works he has been followed, very much against the true interests of science. Bonaparte, following Schlegel and others, adopts Brisson's genus with some restrictions, and with his usual fondness for converting specific into generic names, he has followed Kaup by placing the subject of the present notice in a separate genus under the name of *Petronia rupestris*.

The Rock Sparrow is an inhabitant of the warm and temperate regions of Europe, namely, Spain, the south of France, Sardinia, and the whole of Italy. In the south of France it is very common in Anjou, the Pyrenees, and the Basses Alps. It is found occasionally in Lorraine, and several individuals are stated by Degland to have been captured in the neighbourhood of Paris, and one female at Lille, in October, 1839. It is rare in the north of France and Switzerland, and is only occasionally found solitary in the west and south of Germany, viz., the Rhinegau, Wetherau, and several other places on the Rhine. Naumann says it has been shot in Thuringia, but not, to his knowledge, in Anhalt. It is included in Savi's "Birds of Tuscany," but it does not appear to be a common bird there. Count Mühle says that it is solitary in the whole of Greece on the bare stone walls, and very plentiful throughout the Grecian Islands. Lord Lilford, in his description of birds observed by him in the Ionian Islands, ("Ibis," vol. ii., p. 137,) says that he observed several of these birds in the Acrocerannian Mountains, in May, 1857, and in Montenegro in August of the same year. It was found by Captain Loche in the three provinces of Algeria; and is included by Mr. Tristram in his list of the birds of Southern Palestine, where it is observed everywhere on the bare stony hills. Dr. Leith Adams informs me that it is very common in Sicily, occasionally visits Malta in the spring, and is abundant in Affghanistan.

Salvadori (*Fauna d'Italia*) writes, "This species is found throughout Italy. I have seen many individuals in April, in Sardinia, near Seni. According to Cara it nests there. It is also stationary and nests in Sicily. According to Bettoni it does not nest in Lombardy, which statement is doubtful, while it certainly nests in Piedmont. A young bird just from the nest killed in Piedmont is preserved in the Museum of Turin. It appears in Malta accidentally (Wright). It inhabits

mountainous places, and it may be seen not rarely in the meadows and upon the wooded rocks. At the approach of winter it leaves the western part of Italy, and collects in the south. In the autumn many arrive in the north. They build in the holes of trees. The nest resembles that of the House Sparrow's. The eggs, in number from five to six, are whitish, yellowish, or even rosy colour, covered with brown spots, which are sometimes collected in a corona at the obtuse end."

Doderlein says of this bird that it is rather abundant in the mountains of Modena, especially during the time of passage. It generally lives near houses, and nests in the holes of trees. In the autumn the young and those which descend from the Alps emigrate to the south. Rarely an individual or so remain in the mountains during the winter, but come down into the plains when the snows are very heavy.

According to Naumann, to whose invaluable work I am indebted for most of the following information, it is a stationary bird in mild climates and a migratory one in cold countries. They associate in small flocks rather than greater multitudes, which are at all events never seen in Germany. In the Rhinegau, especially near Wiesbaden, they are observed in autumn on fruit trees by the sides of the roads, and in corn-fields, in flocks. Brehm mentions flocks of about ten. They choose mountainous places for their residence, where, among rocks and ruins they love to dwell. In winter they mix with other birds, and are seen about the roads and villages, but it does not appear that they visit farm-yards. In autumn they are found in stubble-fields. They appear to avoid level land. At night they sleep in holes of walls and ruins, always choosing a hole with a very narrow entrance, and shew their sociable qualities by selecting places near each other. Brehm records having seen three of them enter the same hole.

Its habits are entirely those of the Sparrow, and nothing can justify that reckless disregard of close affinities by which it has been separated from that genus. Though resembling most in its habits those of our House Sparrow, it differs from it altogether in one thing,—it is more distrustful of man, and is generally a very shy bird, flying away upon the approach of danger, and keeping a good look-out against it. Its movements on the ground are like those of other Sparrows, but it is more active and brisker. In its flight it is compared by Brehm to the Crossbill. They are very sociable among each other, with the exception of certain quarrels which take place like those of the House Sparrow, and their tone of voice is similar.

Leisler records having seen large flocks of the Rock Sparrow in the Rhinegau, in 1803, where they were making a House Sparrow-like

chattering among the trees. The manner of the bird is crafty, and it frequently moves its wings with a quick short movement. They are very sensitive to the cold of winter, and many are found dead during the season in the holes of trees.

The usual note is a homely croak, similar to the call of the Mountain Finch. Brehm says it may be represented by 'qjiwit,' and that it is similar to that of the Goldfinch, and very different from that of the Linnets and Siskin. One note serves as a warning cry, another invites to settle, and a third is the signal for flight. A young bird begins to pipe early, and has a note like that of the Canary bird, in addition to the 'qjiwit.' When it fears danger or its nest is approached it calls out like the other Sparrows. Brehm compares the song to that of the Reed Bunting, which is not saying much for it, but it is not without melody.

In confinement the Rock Sparrow is very tame and sociable with its kindred. Brehm brought up a young bird which was very confiding in its manner to him. It would feed out of his hand, and let him know by a cry or a look when it wanted food. It sung before it was full-grown, and was heard constantly in October, being loudest when the other birds were singing. Leisler informs us that he brought up a young bird, which was very docile and an excellent mimic, having, among other qualifications of this kind, learned to imitate, much to his master's annoyance, the cry of his Marmot. This bird, however, did not seem inclined to sing when people were in the room, but it was nevertheless very tame, comical in its habits, and mischievous.

The Rock Sparrow feeds on seeds of various kinds, insects and their larvæ, especially beetles, grasshoppers, and Naumann adds, I am sorry to say, cherries. Large grains of sand are often found mixed with the food in the stomach. It frequents ploughed fields, meadows, and roads, after corn-seeds, especially oats, which it seems to like best of the cereals. It is also a berry feeder. It lives in early summer on insects; and feeds its young, like the rest of its family, upon caterpillars and other larvæ, together with beetles, grasshoppers, and moths, all of which it removes from the cultivated lands, very much to the benefit of the farmer, who rewards its relations for the same service in this country with a dose of poison. Naumann, however, expatiates upon the fondness of the Rock Sparrow for cherries, in search of which it will lead its young into orchards, giving them the fleshy part, and then cracking the stone for the kernel with its strong beak. When it catches large insects it bites off the head, wings, and legs, and eats the body in small pieces.

It differs from other Sparrows in preferring oily to farinaceous seeds.

The Rock Sparrow nests in the Rhine country, in the neighbourhood of Weisbaden especially. They build in high fruit trees, or in the holes of ruins of old castles and watch-towers. They pick out a narrow and deep fissure in the walls, generally pretty high up; they never build in woods. They will return year after year to the same hole, and, like other Sparrows, young and old sleep in them together. The nest is like that of the House Sparrow; there is a great heap of straw and stalks of grass, with fine rootlets and other fibres of plants, old rags, and thread, and it is lined with hair, worsted, wool, and feathers in abundance. It is always placed so deeply in the hole that the materials cannot be seen outside.

It appears from the authority of Brehm that they only lay two or three eggs. Naumann, however, thinks this is a local peculiarity and not general. The eggs are very similar to those of the House Sparrow, but larger, and equally as various. The ground colour is a cloudy white, with ash-grey and brown dots marked over with streaks and spots, through which much of the ground colour appears. Those slightly marked have often greater spots, others mostly small streaks running over them, and the markings are generally most numerous at the larger end. The grey marking varies into brighter and darker, and the brown changes from yellowish to reddish grey brown, and even almost into blackish brown or slate-colour.

They appear only to breed once in the year. The old birds are very anxious about their young, and are in great distress when anyone approaches the nest which contains them, and are very careful watchers.

The male in breeding plumage has the head light brown, with two darker bands on each side; all the upper parts more or less of the same tint, marked with longitudinal patches of darker brown, the borders of the feathers being lighter; rump and under tail coverts light brown, the feathers tipped with white; throat, crop, and abdomen tawny white, with grey and brown spots; a yellow band separates the throat from the crop; sides of the head and neck ash-colour, with a brown band beneath the eye, and a white broad line separating the eyebrow from a similar band on the head. Wings the same colour as the back, with the coverts tipped with russet grey; the primaries brown, with a white patch on the middle of each outer web, except the first, and more marked on the second and third; tail feathers brown, and terminated, except the two middle ones, with a round white spot on the inner web. Beak brown above, yellowish below; feet russet; iris brown.

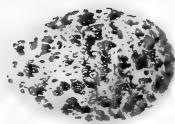
The male in autumn has the general tints browner; the black spots and the whitish ones above larger; the scapularies, wing coverts, and primaries tipped with whitish; the under parts with the longitudinal brown spots larger and darker.

The female differs very little from the male; the yellow mark on the neck is not so distinct, and all the other colours less lively.

The young before the first moult resemble the female, without the yellow mark on the neck. Degland says this mark is lost in confinement.

My figure of this bird is from a specimen kindly sent me by Mr. Tristram, marked "Bethlehem, 31st. March, 1850." The egg is from my own collection. It was taken in the Basse Alps, and is marked "Barcollonetta." It was sent to me by Dr. Meves of Stockholm.

The bird has also been figured by Buffon, pl. enl. 225, under the name of *Moineau de bois ou Soulcie*; Roux, Ornith. Prov., pl. 75 and 76, (male and female;) Naumann, Vogel Deutsch, pl. 116, (male and female;) Bouteille, Ornith. du Dauph., pl. 33, f. 1, but not a good figure; Gould, B. of E., pl. 186.



1. ROCK SPARROW.

2. ITALIAN HOUSE SPARROW. 3. SPANISH SPARROW.



TOMAILA M. HODGSON. : FRANCIS W.

GRANIVORÆ.

Family FRINGILLIDÆ. (Bonaparte.)
Genus PASSER. (Brisson.)

ITALIAN HOUSE SPARROW.

Passer domesticus cisalpinus.

<i>Passer domesticus cisalpinus,</i>	SCHLEGEL.
“ “ var. β ,	KEYSERLING ET BLASIUS.
“ italicæ,	BONAPARTE. GRAY; Hand List, No. 7269.
“ italicus,	DEGLAND.
<i>Fringilla cisalpina,</i>	TEMMINCK.
<i>Pyrgita italicæ,</i>	VIEILLOT.
<i>Moineau cisalpin,</i>	OF THE FRENCH.
<i>Italianischer Haussperling,</i>	OF THE GERMANS.
<i>Passera reale,</i>	SAVI.
“ capannaja,	STOR.

Characters of Variation.—Back light chesnut and black; top of the head and nape maroon or brown; flanks unicolorous; the first primary is longer than the third, and very nearly as long as the second, which is slightly the longest in the wing; wings reach more than half way down the tail. Length about six inches.

It is impossible to resist the fact that the present is only a permanent variety of the Domestic Sparrow. I have endeavoured with the greatest care, by a comparison of specimens, to detect any real specific difference, but without success. The Italian bird differs from the Domestic Sparrow in some unimportant yet permanent colouration, and the wings extend further down the tail when closed. There is also a slight difference in the second primary, which is relatively to

the first and second longer than in the Domestic Sparrow. But there are the same general dimensions precisely; the flanks and abdomen are of the same unicolorous dull grey; the black markings on the throat and crop are of the same character, and defined by the white of the cheeks and side of the neck with a similar sharp and distinct outline. The habits too are precisely similar, and it is only as a variety under the name given it by Schlegel, that I admit it into this work.

The Cisalpine Sparrow replaces the common type throughout the whole of Sicily. It is found during its migration in the south of France, and has been noticed by Strickland as occurring in Smyrna. Dr. Leith Adams also informs me that it occurs in Malta, and that it is said to breed with the following species. Its habits and propagation are precisely similar to those of the House Sparrow. It builds its nest in the same places, and of the same form, and the six eggs which it lays are similar in size, shape, and colouration to those of our well-known bird.

Salvadori (*Fauna d'Italia*) writes, "The museum of Turin possesses two individuals quite alike of a beautiful variety of *Passer*, which have the throat and the upper part of the chest of a beautiful chesnut colour. This species in Italy takes the place of *Passer domesticus* of the rest of Europe. It is very common in all Italy; less so in Corsica and Malta, where it replaces *Passer salicarius*. Many authors have affirmed that this species is found in Sicily, which is not true according to Doderlein, confirmed by Benoit, of Messina."

Doderlein says of this bird, "This is merely a variety of the Domestic Sparrow, and is very abundant in the territories of Modena and Reggiaro. They have become almost domestic. They lay two or three times yearly, placing the nest by preference under the roofs of houses, in holes of walls, and in nests abandoned by the Swallow, and more rarely upon trees near buildings. They never emigrate. It varies much in its plumage: some become nearly albinos—iron-coloured and dark, as may be seen in the Museum of the University of Modena."

Mr. Tristram remarks, (*Ibis*, vol. i., p. 293,) "In its habits this Sparrow agrees exactly with our own, inhabiting the roofs of houses and the rafters of sheds in preference to the more distant groves and gardens. I never found it in great communities at a distance from buildings; but wherever man dwells in the desert there it is found his constant companion. Probably there are frequent instances of hybrids in the gardens where both species may be found together."

The differences between the two birds having been expressed in the

characters of variation at the head of this notice, a more detailed description is unnecessary.

My figure of this bird is from a specimen sent me by Mr. Canon Tristram. The egg is from my own collection. It was taken in Italy, and sent me by Moeschler.

It has been figured also by Roux and Gould.

GRANIVORÆ.

Family FRINGILLIDÆ. (Bonaparte.)
Genus PASSER. (Briss.)

SPANISH SPARROW.

Passer salicarius.

<i>Passer salicarius,</i>	VIEILLOT.
<i>Fringilla hispaniolensis,</i>	TEMMINCK.
“ <i>sardoa,</i>	SAVI.
<i>Passer domesticus salicarius,</i>	KEYSERLING ET BLASIUS.
<i>Moineau à poitrine noir,</i>	OF THE FRENCH.
<i>Schwarzbrüstiger Sperling,</i>	OF THE GERMANS.
<i>Passera sarda,</i>	SAVI.

Specific Characters.—Top of the head deep chesnut or maroon; back black, with longitudinal streaks of cream-colour; flanks thickly spotted with black on a dirty white ground. The first primary the longest in the wing, but nearly equalled by the second and third, and all of them longer than the fourth. Length about six inches; carpus to tip three inches; tarsus nine lines; middle toe and claw eleven lines; beak six lines; tail two inches and a half.

THE Spanish Sparrow has very strong structural affinities with the House Sparrow, but its ornamentation and habits are so decidedly different that I think there can be no doubt of its specific distinction. Professor Blasius has, however, made it a variety only of the *Passer domesticus*.

The Spanish Sparrow is, as its name implies, an inhabitant of Spain, but it is also common in the south of Europe generally, particularly in Sardinia, Sicily, and Italy. Count Mühle says it is very rare in Greece, but when found it is not in company with the Domestic Sparrow, from which he considers it quite distinct. Dr.





SPANISH SPARROW.

Leith Adams informs me that it is the commonest bird in the island of Malta, and breeds in the walls of the forts and houses. Dr. Adams also mentions having shot and seen it in confinement with a yellowish black bill, and lighter tinge of plumage, but in no way distinct. It is also said in Malta to breed with *P. cisalpina*, and that a hybrid is produced, but Dr. Adams has not been able to confirm this statement. Dr. Adams further adds, "I have seen specimens in collections made in the Western or Trans-Indus portion of the Punjab, where it is known by the name of 'Cabool Sparrow.' I do not think it is found further eastward."

Salvadori (*Fauna d'Italia*) says, "This species is very common in Sardinia, Sicily, Malta, and, according to Savi, also in Corsica. It is not impossible that it may be found in the extreme southern part of Italy, as it can easily cross over from Sicily, but I have not succeeded in being quite certain of it. In Malta, according to Wright, it is found in company with *P. Italica*, which is there a common species; and he does not think the two really distinct, and refers to the authority of Jardine, which appears to me incomprehensible, it never having occurred to me to confound the *P. saliciculus* of Sardinia with *P. Italica*. I think that in Malta no other species exists except *saliciculus*, as in Sardinia and Sicily, and that Wright's individuals, showing the passage from one into the other, are probably only the perfectly adult *P. saliciculus*, whilst Doderlein affirms that all the individuals in Sicily called *P. Italica* are the adult *saliciculus*. It has the same habits as *P. Italica*."

Doderlein says of this bird:—"This species or race is indigenous in the southern countries of Europe, and is characterized by its maroon colour, and the black spots on its sides—the wing fascia blackish white. It represents the preceding species, *F. Italica*, in the greater part, if not the whole of Sicily. It is not common at Palermo, where it is a good deal shot down. It is very rare in Modena, nevertheless there are localities where it is plentiful. Its habits are similar to those of the preceding. It builds in the crevices of mountain rocks, as well as trees, etc. It is not so easily domesticated as *P. Italica*."

It seems very common in Africa. Captain Loche met with it in the three provinces of Algeria. Mr. Tristram has recorded it as abundant in Northern, and Mr. Salvin in Eastern Africa.—("Ibis," vol. i.) Mr. Tristram also includes it in his list of the birds of Palestine, and Mr. E. C. Taylor says that it is abundant in Egypt, frequenting the open country in large flocks, and roosting in trees.

I shall take the liberty of quoting Mr. Tristram's and Mr. Salvin's

very interesting remarks, from the work above alluded to. Mr. Tristram says, "The Spanish Sparrow, of which the Arab name is Zaouch, is abundant in vast flocks wherever there is moisture, and especially among the reeds in the salt marshes." At Wareglia and Tuggart, where the salt lakes are never dry, the noise of these birds is perfectly deafening, and a hundred may be, and I am told have been, brought down at a shot. Its habits are certainly very different from those of its familiar congener here, though in boldness and activity it rivals him. I am not acquainted with this bird in Spain; but in Africa, as a general rule, it does not affect the habitations of men, and always breeds near water, in vast colonies of many thousands."

—(Page 293.)

Mr. Salvin says in his "Five Months Bird-nesting in the Eastern Atlas," ("Ibis," vol. i., p. 314:—"The Spanish Sparrow is found in great numbers during the breeding season, among the tamarisk thickets on the Chemora, and in the high sedge at Zana. The Arabs destroy the nests, eggs, and young wherever they find them, as their great numbers do much damage to the crops of corn. The nests are placed as thickly as they can stand, the whole colony, consisting of perhaps one hundred pairs, occupying only five or six trees. The noise and ceaseless chattering proceeding from one of these 'Sparrow towns' can easily be imagined; and, guided by the sound alone, one may walk directly to the spot for a considerable distance. One Sunday morning four Arabs came to our tents, and gravely sitting down in a row, opened the hoods of their burnouses, and displayed eight hundred or a thousand Sparrow eggs, which they arranged in four heaps before them, and remained in their sitting posture, contemplating them with evident satisfaction. We were rather taken by surprise, but selected the best for our collections, reserving the rest for omelettes."

I have received the male and female of the bird which Dr. Leith Adams says is very common in Malta, and which he has labelled *Passer salicarius*, Vieillot. Upon close comparison I could not discover any real specific differences between these skins and our Common House Sparrow, *P. domesticus*. I wrote this to Dr. L. Adams, and in reply that gentleman remarks:—"In the absence of specimens for comparison, my impressions have always been that our Sparrow in Malta is a true type, or else a variety of the *Passer salicarius* of Vieillot, and Sir W. Jardine, to whom several type specimens were sent, says the same. I have, however, since you wrote, made a very long series, and sent it by a friend to Mr. Sclater, requesting he will make particular enquiry into the subject, and publish his

views in the 'Ibis.' It is very curious in such a central place as Malta, where so many naturalists have touched, that we should be still in doubt as to the common Sparrow of the island."

Brehm, in Bädeker's "European Eggs," says of this bird:—"It lays from four to six eggs, which are somewhat smaller than those of the House Sparrow, bluish or greenish white, like those of the Italian Sparrow, often very dark at the thick end; generally oval, but sometimes much lengthened."

The male in spring plumage has the top of the head and the nape dark chesnut brown; back black, streaked with cream-colour; upper tail coverts olivaceous brown; cheeks and superciliary ridge pure white; throat and upper part of breast deep black, while the lower parts of the breast and flanks are thickly spotted with large black markings on a white ground; middle of the abdomen and under tail coverts dirty white. The wings with a broad band of white across them, formed by the tips of the lesser coverts, and there is a similar band above the carpus, extending from the cheeks; the lesser coverts are same colour as the top of the head and nape, the others broadly bordered with russet. Tail olivaceous brown, with the feathers slightly bordered with ash-colour; beak black; feet reddish; iris brown.

In autumn the male has the feathers of the neck and crop bordered with ash, like the Domestic Sparrow, and the white of the cheeks also more ash-coloured.

The female has the head, top of neck, and body grey brown, with the feathers of the scapularies and the quills of the wings, fringed along their borders with yellowish; below, the colour is dirty white, with faint spots of brown in front of the neck and crop, and the flanks of a russet and ashy tint; beak brownish above, yellowish below.

The young before the first moult resemble the female, only the tints are paler, and the commissures of the beak soft and yellow.

My drawing of this bird is from a specimen kindly sent me by Mr. Canon Tristram. It is marked "Rhodes, April 19, 1858." The egg is from my own collection, and was taken by Krüper near Smyrna.

It has also been figured by Roux, Ornith. Prov., pl. 84, (adult male;) Gould, B. of E., pl. 185.

ZYGODACTYLI.

Family PICIDÆ. (Bonaparte.)
Genus *PICUS.* (*Linnaeus.*)

Generic Characters.—Beak strong, cuneiform, or rounded, and grooved above, about as long as the head, straight, and pointed; nostrils open, oval, more or less hid by the setaceous feathers which cover the base of the beak. Tongue very mobile, capable of being projected from the mouth, armed with small sharp needle-like processes bent backwards and horny towards the tip. Feet robust and short, with three or four toes; claws arched, compressed, and pointed, formed for climbing. Wings elongated, the bastard quill short, the third and fourth the longest. Tail composed of quills having stiff and elastic shafts, ten or twelve in number, and serving as a prop in climbing.

WHITE-RUMPED WOODPECKER.

Picus leuconotus.

<i>Picus leuconotus,</i>	MEYER AND WOLFF, 1810.
“ “ “	TEMMINCK, 1820. BECHSTEIN.
“ <i>leuconothus,</i>	VIEL.
“ <i>polonicus,</i>	BREHM.
“ <i>syriacus,</i>	TACZANOWSKI.
“ <i>leuconotos,</i>	BREHM.
<i>Dendrodromus leuconotus,</i>	GRAY; Hand List, No. 8552.
<i>Pie varié à dos blanc,</i>	OF THE FRENCH.
<i>Weissrückiger Buntsprecht,</i>	OF THE GERMANS.
<i>Picchio vario Massimo,</i>	STOR.

Specific Characters.—Plumage varied; the rump white, and the upper tail coverts crimson and white. Length ten inches and three quarters; from carpal joint to tip of wing five inches and a half; tarsus one inch; beak (upper mandible) one inch and two fifths; tail three inches and a half.



THE White-rumped Woodpecker is an inhabitant of the most northern parts of Europe and Siberia. It is not rare in Russia, Poland, and Prussia, extending through Esthonia, Courland, and Finland. It is sometimes found in Silesia, and occasionally in the western and southern parts of Germany. One individual is recorded as having been shot in the Pyrenees, by M. Ernest Dalaybe. It is included in the birds of Greece, by Count Mühle and Dr. Lindermayer. Mr. Wheelwright writes me word that it is spread over Scandinavia, but appears to be more common in the midland districts. "They do not, however, breed with us, but in the thick fir forests of North Wermerland. It breeds also in Gothland, but is a rare winter migrant to Scania. It seems to prefer level tracts to stony rises. It is by no means shy, and often comes in winter about the wood fences round the houses; but in the forest it is generally seen high up on the top of dead trees. In manners and habits it resembles the Greater Spotted Woodpecker, and the cry is much the same. Nilsson says that they are seen generally in families in the autumn and winter. This I cannot corroborate. I never met, in our forest, in winter, more than two together, but if you shot one its partner was never far off. They breed very commonly in Smaland. It has not been identified in Denmark." It has occurred accidentally in the Hebrides, and Gould figures and describes it in his Birds of Great Britain.

Salvadori (Fauna d'Italia) writes of this bird, "Bonaparte is said to have been the first to announce this Woodpecker among the Italian species. It is very rare in Italy. When found it occurs in the alpine groves, where it is stationary and nests. It has been especially observed in the Tyrolese Alps, but it is not difficult to believe that it may be found throughout the whole alpine region. Sometimes an individual may be found wandering from its usual habitat. One was killed some years ago in the groves of Castel Nuovo, in the valley of Ciana in the Tuscan marshes. It is preserved in the Museum at Pisa. Two other males I have seen in the collection of De Negri, of Geneva, and both were taken in Liguria in the winter of 1863. We must not omit to state that *P. leuconotus* is said to be common in Corsica, which was affirmed by Genè, and repeated to me by Cav: Comba, who was with Genè in Corsica, and it is also referred to by Malherbe, upon the authority of the Baron de Selys-Longchamps. It is not creditable to science that we know scarcely anything about the ornithology of Corsica, and it seems to me that the statement of Genè requires confirmation, since it is very singular that it should exist in Corsica, and not be found in the neighbouring Sardinia. This Wood-pecker is common in Hungary, Silesia, Poland, and Scandinavia."

In Germany the White-rumped Woodpecker is both migratory and stationary. In the late autumn or winter it is found in the great forests, and comes thence into the neighbourhood of houses, fruit gardens, villages, or even towns, where it dwells very confidingly.

On the wing it is very like our Greater Spotted Woodpecker, and its voice differs but little from that of any of its allied species. It feeds upon insects found under the bark, maggots, caterpillars, and other larvæ. Like the Grey Woodpecker it is also very fond of ants and their eggs. Naumann says that one was shot in Silesia which was supposed to have been killing the bees from the hive, but, as none of these insects were found in the stomach, we may, I think, fairly enter a verdict of "not guilty" on this count.

The White-rumped Woodpecker builds, like its congener, in the holes of trees, particularly oaks. It lays four or five clear white shining eggs.

Although I have specimens kindly sent me by Mr. Wheelwright, I will let that gentleman speak for himself, as his description is drawn up from birds recently killed. Male; length ten inches and three quarters; expanse of wing seventeen inches; tail beyond the wings. Head above, carmine red; forehead white, with a brown tinge. Around, and at the back of the eyes, a large white spot, and another below on the sides of the neck; throat white. From the under mandible a black streak extends backwards under the eyes, and becoming broader at the back of the ears, passes down the sides of the throat to the breast. Breast white, with a greenish yellow tinge, and having, as well as the flanks, longitudinal streaks of black; belly and under tail coverts red. Neck above, top of back, and lesser wing coverts glossy black; the middle and lower part of back white; outer half of greater wing coverts white; the secondaries transversely barred with black and white, which arises from a series of white round spots, placed on the edges of each web at regular intervals, a similar effect being produced by the same means on the primaries, giving a barred appearance to the whole wing when closed. The first primary is about the same length as the sixth, and both are much shorter than the intervening four. Upper tail feathers and coverts coal black; the under ones cream-colour, barred with black, and becoming rufous at the tip. Iris nut brown; beak horn blue; legs lead grey.

The female has the head glossy black above; forehead white, tinged with rusty brown. The rest like the male, but more dull. The colours of both, especially the male, brighter with age.

My figures of this bird and its egg are from specimens sent me by Mr. Wheelwright from Sweden.



1. WHITE-RUMPED WOODPECKER.
2. MIDDLE SPOTTED WOODPECKER.
3. THREE-TOED WOODPECKER.
4. GREY WOODPECKER.
5. SHARPE'S GREEN WOODPECKER.

The bird has also been figured by Bechstein, *Naturg. Deutsch.*, vol. ii, pl. 25, figs. 1 and 2, (male and female;) Stor, *Degli. Ucc.*, vol. ii, pl. 169, (old male; Meyer, *Vogel Deut.*, vol. i., pl. 11, (male and female;) Naumann, *Vog. Deutsch.*, pl. 135, (male and female;) Gould, *B. of E.*, pl. 228; Malherbe, *Picidæ*, pl. 23, figs. 1 and 2, (male and female;) Dresser, *Birds of Europe*, (male and female.)

ZYGODACTYLI.

Family *PICIDÆ*. (*Bonaparte.*)
Genus *Picus*. (*Linnaeus.*)

LILFORD'S WOODPECKER.

Picus Lilfordi.

Picus Lilfordi,

DRESSER; B. of E.

Specific Characters.—Top of the head a rich crimson, whereas that of *P. leuconotus* is scarlet. Those parts which are white in the latter are yellowish in the present species. Lower back and rump barred with black and white.

THIS bird, which has been erected into a species by Mr. Dresser, is very similar to its congener the White-rumped Woodpecker, but I think they are sufficiently distinct to require a separate notice.

This bird was discovered by Lord Lilford, a most zealous naturalist, to whom I beg to offer my extreme thanks for his great kindness in assisting me with specimens for this work. I have the pleasure of figuring the identical bird from which the species was determined, marked “Valley of Viana, Epirus, March 5, 1857.”

Lord Lilford remarks of this bird, in Dresser's “Birds of Europe:”—“I met with this species in the high woods in the Valley of Viana, near Butrinto, in Epirus, in the winter of 1857. It is not uncommon there, but very difficult to approach. The note of this bird at that season very much resembles that of *Picus major*—a loud single “twit,” repeated at short intervals. I never heard it produce the jarring noise so often heard from the greater and Lesser Spotted Woodpeckers.”

According to Lindermayer it is rare in Greece. Dr. Krüper says, “it is more common on Mount Olympus than anywhere else, but is found both on the mountains and plains of Greece, being occasionally met with at Lake Venchori, and on Mount Parnassus.”



It is impossible at present to define the geographical limits of this species, as it is so often confounded with *P. leuconotus*.

In habits and nidification it doubtless is similar to its congener.

A male bird sent to me by Lord Lilford, marked March 5, 1857, and which is figured, has the top of the head a bright crimson, dotted with olive brown; nape and upper back black; rump barred black and white. Wings black, with six white bands to the end of the secondaries. Primaries dark brownish black, dotted on their outer web with white spots, and on the base of the inner webs with larger white spots. The third true primary the longest. Throat, neck, and upper chest yellowish white; moustache black. Abdomen yellowish white, with longitudinal streaks of black. Under tail coverts and lower abdomen vermillion. Under wing dark grey with white spots. Length ten inches; wing five inches and a half; tail three inches and a half; tarsus one inch; upper mandible 1.7; lower mandible 1.6.

This bird has been figured and described by Mr. Dresser, in his "Birds of Europe," by whom also the species was determined.

ZYGODACTYLI.

Family PICIDÆ. (Brisson.)

Genus *Picus*. (Linnæus.)

MIDDLE SPOTTED WOODPECKER.

Picus medius.

<i>Picus medius,</i>	LINNÆUS.
“ <i>varius,</i>	BRISSON.
“ <i>cynædus,</i>	PALLAS.
<i>Dendrocoptes medius,</i>	GRAY; Hand List, No. 8555.
<i>Pic varié à tête rouge,</i>	OF THE FRENCH.
<i>Mittlerer Buntspecht,</i>	OF THE GERMANS.
<i>Picchio rosso mezzano,</i>	SAVI.

Specific Characters.—Plumage varied; rump black; under tail coverts red; flanks rose-colour, with longitudinal streaks of black. Head carmine red in both sexes. Length eight inches and a half; expanse of wing fifteen inches. Tail three inches and a half.

THE Middle Spotted Woodpecker is found generally in those parts of Southern Europe, with the exception of Great Britain, which are inhabited by the Greater Spotted. In Sweden it is found in the south, and is even more common in Skania than its congeners *major* and *minor*. It is not found in Finland or Estonia, but in Prussia Proper occasional specimens have been captured. It is very common in some parts of Germany, and tolerably plentiful in Switzerland, Italy, and France. It is plentiful in some parts of Siberia, and is met with all the year round in Denmark. It occurs only accidentally in Holland. I have a young female which was shot by Mr. C. Farman at Shitantjvek, in Bulgaria, in June, 1866.

Salvadori (Fauna d'Italia) writes of this bird:—“*Picus medius* is also rare in Italy, but less so than *P. leuconotus*. I only possess



THE SPOTTED WOODPECKER

one individual found by me in the market of Pisa, and Savi has one from the plantations of S. Fiora, and one from the Vale of Cecina. Althammer and Perini say that it is rare in the Tyrol and Veronese. According to Monti it is not often seen in Comasco. Risso says it is stationary upon the Maritime Alps. It is not found in Malta and Sardinia, and probably is equally unknown in Sicily. As I have verified, the *P. medius* of Mina and Doderlein is no other than the young of *P. major*, which at that age has, like *P. medius*, the red vertex, which leads those who are not well cognizant of the distinctive characters easily to confound it with the other."

This species has been thought by some ornithologists to be the young or only a variety of *Picus major*. But they are very distinct both in ornamentation and habits.

The female has the occiput and vertex red, as well as the male, which is not the case with *P. major*. *P. medius* never remains long in pine woods, where *P. major* loves to dwell. It is a more active bird, and will adroitly avoid any dispute leading to a fight with that bird; but it will give battle to one of its own species. Its voice is similar, but its call-note weaker.

The Middle Spotted Woodpecker dwells among the thickest foliage of the highest trees, particularly oaks, elms, and aspens. It is not often found on the ground, but like its congeners is generally seen scaling trees, which it will ascend to the top bough and perch there. Its habitation is in the highest hole it can find, and it will continue to use the same tree for years if not driven away. It is a most assiduous "tapper," and may often be seen on the under side of a decayed bough working away; the entrance hole turned towards the ground.

It is a very handsome bird, perhaps the most so of all the European Woodpeckers. It is restless but not shy, and in pairing and breeding seasons very incautious. It can make good use of its legs in hopping on the ground, or from branch to branch. It has a whirring wavy flight, and appears on the wing a slenderer bird than its ally the Greater Spotted.

Naumann says that this bird will feed not only on insects but also upon many tree-seeds, and to assist in digesting them it may be seen picking up particles of gravel at the base of the tree. It is not content with the insects it finds under the bark, but will split off entire pieces, and crush the rotten wood beneath into holes, in its search for wood-feeding larvæ, such as *Sirex*, *Cerambyx*, *Bostrychus*, *Forficula*, etc. It never seems to suffer for want of food during the winter; it is generally in good condition, but never fat. It is very

fond of nuts, and will carry them like a Tomtit into the fork of some near tree, and crack them: it generally swallows the kernels whole, and will eat acorns and beech nuts in the same way. Naumann further tells us that it is a fruit-stealer, and will rob cherry trees, not so much however for the fruit pulp as the kernels of the stones, and that it will also split open fir-cones, and feed on the seeds when it cannot get better food. It does not affect the neighbourhood of water, is not often seen to drink, and still more rarely to bathe. Its stomach is larger than that of the other Woodpeckers.

It nests in woods, and sometimes in fruit gardens, which are overhung by woods of thick foliage. In the end of March or April they repair to their breeding places, which are easily betrayed by their restless habits and cries. Very soon (I am quoting Naumann) the male is seen chasing his mate from tree to tree, and among the boughs—or two males are observed having a battle royal—from which they frequently fly to swing from the highest summit of the trees. They now either call to their mates with a clear bright voice, or whirr against their rival. Their nesting place is thus easy to discover, as also the tree by the debris at the bottom, but the hole is generally hid from view, and not so easily found. It is not often less than twenty feet from the ground, and very often as high as sixty feet. The entrance hole is quite round, not larger than is actually necessary, and appears from below so small that few people would believe it belonged to this bird. It is widened inside in the form of a ball, and extends downwards from the entrance seven to ten inches—seldom more.

The eggs are laid on fine wood shavings under the walls of the very prettily-worked entrance hole. They are generally five or six in number, sometimes seven. They resemble those of the Greater Spotted, but are much smaller, oval in shape, tender shelled, and of enamelled whiteness. They are hatched in fifteen days, male and female sitting alternately, and the young, in Naumann's own words, are "blind, ugly, helpless, thick-headed," having, like other young Woodpeckers, a cartilaginous knob upon the corner of the beak. When full fledged they fly round the tree in circles, until they gradually separate into twos and threes. The old birds display great affection for their young.

Mr. Wheelwright describes the old male from freshly killed specimens as follows:—Forehead grey; vertex and occiput carmine red. Throat, sides of the head, and neck, white, with a black band which commences at the gape, and gradually broadening, forms a triangular spot on the side of the neck. Back of the neck, back, and rump

black; shoulders white; wings black, with white spots in pairs on both webs of the primaries and secondaries; breast white, with a yellowish, and the belly white, with a reddish tinge, with longitudinal black streaks along the sides of both; under tail coverts carmine red. The side tail feathers at the end white, with black transverse bands; the four middle feathers quite black; iris brown, encircled with a whitish ring; beak shorter, more compressed and weaker than in *P. major*; lead-coloured at the root, bluish black at the tip.

The female differs from the male only in having the colours of the head less bright, and the streak from the gape greyish and more indistinct.

The young male much resembles the female.

My figure of this bird is from the skin of a male shot in Asia Minor on February 23rd., 1866, by Mr. Robson, and which came into my possession with Mr. Farman's collection; that of the egg is from Skania, Sweden, sent me by Mr. Wheelwright.

This bird has also been figured by Buffon, pl. enl. 611; Vieillot, Dict., pl. 26; Roux, Ornith. Prov., pl. 61, (adult male;) Naumann, Vogel Deutsch., pl. 136, (male and female;) Gould, B. of E., pl. 230; Sepp, Nederl. Vog., vol. iv., pl. 637, (male;) Stor, Deg. Ucc., pl. 166, (male,) as *Picchio vario sarto*; Malherbe, *Picidæ pero*, 6 and 7; Dresser, B. of E.

ZYGODACTYLI.

Family PICIDÆ. (Bonaparte.)
Genus Picus. (Linnaeus.)

THREE-TOED WOODPECKER.

Picus tridactylus.

<i>Picus tridactylus,</i>	LINNÆUS.
<i>Picoïdes tridactylus,</i>	LACEPEDE; Mem. del. Inst., 1799.
“ “ “	DRESSER; Birds of Europe.
“ <i>europaeus,</i>	LESSON.
“ <i>alpinus et montanus,</i>	BREHM.
<i>Picus crissoleucus,</i>	BRANDT.
“ <i>leucopygus,</i>	SUNDEVAL.
<i>Apternus crissoleucus et</i> Kamtschakensis,	BONAPARTE.
<i>Dreizehiger specht,</i>	OF THE GERMANS.
<i>Tretaaet Spette,</i>	OF THE NORWEGIANS.
<i>Tretaig Haakspett,</i>	OF THE SWEDES.

Specific Characters.—Only three toes, which distinguish it at once. Crest of male yellow. General plumage black and white.

I HAVE been requested by a distinguished British ornithologist to introduce this bird on the grounds that there is really not the slightest proof beyond the statement of Donovan for including it in the English fauna. Mr. Robert Gray alludes to the subject in his "Birds of the West of Scotland," merely stating that no specimen since the days of Donovan has occurred in Scotland; and Mr. Dresser is equally decisive in his "Birds of Europe." I have therefore no hesitation in including it in my book.

The Three-toed Woodpecker is a truly northern bird, being found principally in Scandinavia, Siberia, Carpathia, Russia, Switzerland, the





Tyrol, Austria, and the Amoor region. It has also occurred in Salzburg, Savoy, Bohemia, Galicia, and Poland.

In a private letter the late Mr. Wheelwright writes to me,—“This bird, the Three-toed Woodpecker, is scarcely so common anywhere in Sweden as any of the others; but in Lapland it is the commonest of all the species. It comes into Wermerland in the winter, but does not I think breed with us. It has never been seen in Scania, although it has once been shot in Denmark. It is not shy, and prefers level to rocky woods. In the winter all the Woodpeckers in our forests secrete themselves by day in holes of trees. In all the Woodpeckers the colours appear to grow more distinct with age.”

In his “Ten Years in Sweden,” he further remarks, “It is common during the breeding-season from the north of Wermerland up to at least Torneo Lapland. In the winter they wander further south. I have remarked that they are most partial to such forests as have been destroyed by bush fire. Very common in Finland. Appears to have been admitted into the British fauna on extremely doubtful authority. I never found more than four eggs in one nest. In Lapland they go to nest the latest of all the Woodpeckers in June.”

The following I take from Dresser’s “Birds of Europe,” now in course of publication:—“Although possessing one toe less than the other species of Woodpeckers, this bird is an equally agile climber, and is indeed if anything more adroit in its movements than many of its congeners. Wherever the fire has devastated a portion of the forest, there it may be looked for, as the insects which frequent the scathed trees form its chief food. Especially during the bright clear winter mornings its busy tapping may be heard; and the number of insects devoured by one bird is almost incredible.

“In its movements it is quick and active, and will rapidly move in a spiral direction up a tree, carefully examining every likely place in search of its food, and then suddenly flying to another tree, will continue its search with the greatest assiduity. When there is a scarcity of insect food, it will at times feed on berries, but only when driven to do so from a failure of its usual support. The nest is like that of the Greater Spotted Woodpecker—a hole made by the bird itself, and on the bottom of the nest-hole it deposits its eggs, generally from four to six in number.”

A series of eggs in Dresser’s collection, obtained in Torneo Lapland, measure from $\frac{5}{8}$ to $\frac{7}{8}$ by $\frac{3}{8}$ to $\frac{6}{8}$ by $\frac{7}{8}$ of an inch, and are pure glossy white in colour. In shape they resemble those of the Middle Spotted Woodpecker.

“Dr. Rey tells us that he has measured twenty eggs of this bird

from Muonio, Lapland, the average of which is 24.2 by 18.6 millemetres, the longest measuring 26.0 by 19, and the smallest 22.5 by 18.75 millemetres. The breeding time is from the 5th. to the 15th. of June, and the number of eggs four or five."

A fine male of this species sent to me by the late Mr. Wheelwright, is $8\frac{3}{5}$ inches long, from carpus to tip $4\frac{8}{10}$, beak $1\frac{3}{10}$, tarsus $\frac{8}{10}$; crown of the head yellow, with the spotted plumage below seen through; forehead spotted black and white; nape and large moustache black; wings deep brown black above. The primaries deep brown black, with four white spots on each web, the outer going near to point, those on the inner larger and more basal. In the secondaries these spots are continued, those on the inner web the largest; scapularies long, with white spots on the inner webs only, the outermost being tipped with a large white spot. Back white in the middle, black on the sides. Rump black, spotted with white. Tail black and pointed, the two outermost black, with broad rufous bars; chin, throat, and neck white; abdomen white, with a series of black streaks on the flanks. The under wing covered, except the tip, with oval white spots. The female has the forehead and crown of the head white, with black longitudinal streaks. Rest as in male. It is the smallest of the two birds.

My figures of this bird and its egg are from specimens sent me by the late Mr. Wheelwright.

It has also been figured by Donovan; Gould, B. of E.; Dresser, B. of E., male and female; and others.



GRIEVED WOODPECKER.

ZYGODACTYLI.

Family GECININÆ. (G. R. Gray.)
Genus GECINUS. (Boie.)

Generic Characters.—Bill widened slightly in its whole length, compressed at the tip; upper mandible thickened at the base, with one or more slightly elevated lines (representing the lateral ridge) close to the culmen, which is slightly arched; gongs very short; wings moderate; anterior and versatile toes nearly equal; hinder part of head with a narrow pointed crest; neck thick; tail rather long and wedge-shaped.

GREY WOODPECKER.

Gecinus canus.

Gecinus canus,

BOIE. BONAPARTE. GRAY; Hand List,
 No. 8677.

Picus canus,

GMELIN, 1788.

“ *viridus norvegicus,*

BRISSON, 1709.

“ *norvegicus,*

LATHAM, 1790.

“ *viridicanus,*

MEYER AND WOLFF.

Pic vert Cendré,

OF THE FRENCH.

Grauer Grünspecht,

OF THE GERMANS.

Picchio verde di Norvegia,

STOR.

Specific Characters.—Plumage green, with the top of the head grey and the forehead crimson; only the middle feathers of the tail having transverse bands across them. Length from tip of beak to end of tail eleven inches; from carpal joint to tip of wing five inches and a half; tarsus one inch; middle toe and claw one inch and a quarter; tail four inches; beak one inch and a half.

THIS bird is essentially an inhabitant of the northern parts of Europe. It occurs in Norway and the north of Sweden, being only

found in the southern parts of this country accidentally. It also occurs in Russia and Finland, but Mr. Wheelwright informs me that it has not been observed by the Swedish naturalists in Lapland. It is sometimes found in Switzerland, near Zurich, and occasionally in France, but never, according to Temminck, in Holland. It is found accidentally in Denmark. It is rare in the south of Germany, but in the north is more plentiful than *R. viridis*. It is in this country (Germany) a bird of passage, leaving in October, and returning to breed in March. It is mentioned by Count Mühle and Dr. Lindermayer among the rarer birds of Greece. According to Temminck it is also found in America and the north of Asia, but it is not included in Bonaparte's list of the birds of the former; nor is the latter given as a locality by the same or other modern authorities.

Salvadori (*Fauna d'Italia*) writes of this species, "It is found only along the Alpine region, but in no place is it so common as it is in some parts of Switzerland, Germany, Norway, and Russia. It is stationary but rare in the Tyrol, occurs accidentally in the Veronese, where it is said to have been twice found by Perini. Two individuals taken in the Alps, in the valley of Lanzo, have been preserved in the Museum of Turin. It is also accidental in the maritime Alps, and from time to time is taken in Liguria. Risso, Durazzo, Althammer, and Perini are the only Italian authors who mention this species."

I am indebted to Naumann's "*Naturgeschichte des Vogel Deutschlands*" for most of the information contained in the notices of this and the following species of Woodpecker.

In winter the Grey Woodpecker chooses a locality for its residence which is solitary, and as much as possible unobtruded upon by man. Each bird seems to have its own hunting-ground, over which it roams regularly day by day. It is generally to be found on the same trees, and if it meets in its territory with the Green Woodpecker, a battle royal is sure to ensue, in which the former, being the weakest, always gets the worst. We may therefore fairly assume, according to the Darwinian code, that it is gradually becoming exterminated. But we have no evidence of this, nor any marks of a happily directed divergence of form in the Green Woodpecker to give plausibility to such a supposition.

"The trees and bushes," says Naumann, "about my residence are always hunted over by a Green Woodpecker, which, when driven away by a shot in autumn, is replaced by another later. Once a female Grey Woodpecker came within the above hunting-ground in March; but it became restless, did not consort with the Green Woodpecker, and called unto itself a mate. Another time a male Grey-head came

and disputed the rights of territorial ownership with the Green. A terrible battle ensued, which ended in the death of the intruder."

"For a number of years I have known a pair of Grey Woodpeckers inhabit a large wood about two miles from my residence. They prefer leafy trees to pines, and woods in grassy mountains well watered by rivers have more charms for them than the hill-side or the mountain forest."

The Grey Woodpecker, like our own, loves to dwell where there are plenty of old oaks, beeches, aspens, or elms standing out in their own solitary and picturesque beauty. It will remain in the same neighbourhood so long as it can obtain its favourite food—ants. When they fail it takes its departure, and does not return. It is often seen on or about old willow stumps near woods. It also comes into the gardens of villages or towns in winter, but does not cling to buildings. It remains, Naumann tells us, much longer, and is seen more frequently on the ground than the Green Woodpecker, and when frightened from thence, it will fly away and suspend itself from a high tree, or take up its position on the top of the same, in which it differs considerably from the Green. At night it takes refuge in the holes of trees, to which it retires, like other Woodpeckers, with great caution in the late twilight.

Naumann tells us that the Grey Woodpecker is a lively, cheerful, and impudent fellow; cautious and crafty withal, but not so shy as *P. viridis*. It is very restless, and always either seeking its food, or flying very adroitly among the trees. It rarely, however, taps upon them like the "Woodpecker tapping" of our own country, but it has equal skill in chiseling out holes for its nest or nightly habitation. It is very quarrelsome and jealous about its food, and is not by any means to be allured from this by any artificial knocking or "tree tapping." It is less shy in the breeding season, and more frequently seen on the tops of high trees than the other Woodpeckers, where it sits crosswise, sunning and pluming itself, and making its whereabouts easily discovered by its call.

It flies like the Green species, and its voice is very much the same, but rings in the ear more agreeably, while the tone is less shrill and sharp. It is heard from March to June, especially in the pairing season, and in the beautiful mornings of the bright sunny spring. The note consists of a full-toned syllable, 'klii, klih, klih, klyh, klyh, kliik, kliik, kliik,' sinking deeper each time, so that the end is much fuller than the beginning thereof. The time is slower than that of the Green Woodpecker, and the tone fuller and less sharp, and an observant ear can easily distinguish one from the other. The male sometimes

also makes a whizzing noise as it sits on a hard branch on the summit of a tree, violently hammering the same, so that the tone is brought out as ‘örrr,’ but shorter than the other allied species. This noise is only heard in the bird under consideration during the pairing season, or when the female is sitting.

The Grey Woodpecker lives principally upon ants, when it can get them. When they fail it eats bark beetles, various larvæ, and, rarely, elderberries. Among ants, *Formica rubra* and *fusca* are its favourites, and the abundance of these insects generally determines the choice of a summer residence. The young are fed with the eggs or pupæ. In summer it lives on no other food, and in winter, it knows where to look for them.

The nest is formed about the beginning of May, in the holes of trees, especially oak. They are not so careful in the choice of a situation as the Black or Green Woodpecker. It is generally in a tree easy to climb, and not very high up. The eggs are six in number, and very like those of the Green Woodpecker. They are, however, considerably smaller, and more pear-shaped in form. The egg shell is of the finest grain—tender and thin, so that when fresh, the yolks shine through the peculiarly clear and enamel-polished white. This effect is destroyed by incubation. The male and female sit by turns, and are so fearless that they will almost permit themselves to be caught at this time. The young remain a long time in the nest, and are fed by the old ones some time after they leave it. The whole family may be seen flying about the forest together.

Mr. Wheelwright describes a freshly-killed male as follows:—Forehead carmine red; a black streak from the nostrils to the eye, and a similar one on the side of the throat from the under mandible. Head and neck ash grey, with small longitudinal blackish streaks or spots on the crown of the head. Back and wing coverts green; rump shining greenish yellow; all the under parts of the body pale ash grey, with a faint green tinge. Wing feathers dark brown, with transverse white spots on the inner web, and similar, but smaller ones on the outer web. Tail feathers blackish green of one colour, with the exception of the two middle ones, which are marked with indistinct transverse bars. Beak thinner than that of *P. viridis*, bluish brown, having the root of the under mandible greenish yellow. Iris red; legs grey green. Length twelve inches; carpus to tip six inches and one eighth; tail five inches.

The female has no red on the forehead, which is replaced by small brown spots; the green on the back has an ashy grey tinge.

The bird figured is a young one of the year, sent me with the

egg by Mr. Wheelwright, of Gardsjö, Sweden. The difference in dimensions are those between fresh and dry skins.

It has also been figured by Edwards, pl. 65, (young male;) Naumann, Vogel Deutsch., pl. 133, (male and female;) Sepp. Nederl. Vogel, page 389, (female;) Stor, Degl. Ucc., vol. ii, pl. 177 (female;) Meyer, Vogel Deutsch., pl. 22, (male and female;) Roux, Ornith. Prov., pl. 59, (male and female;) Bouteille, Orn. du Dauph, supplement, fig. 4; Gould, B. of E., pl. 227; Malherbe, Picidæ, pl. 81; Dresser, Birds of Europe.

ZYGODACTYLI.

Family PICIDÆ. (Bonaparte.)
Genus GECINUS. (Boie.)

SHARPE'S GREEN WOODPECKER.

Gecinus Sharpei.

<i>Gecinus Sharpei;</i>	SAUNDERS; P. Z. S., 1872, p. 153.
“ <i>Sharpii,</i>	DRESSER; Birds of Europe, pl. 123.
“ <i>viridis,</i>	OF AUTHORS.

Specific Characters.—Male: sides of the head grey; moustache of the male entirely crimson; yellow on the rump deeper than in *G. viridis*. Female with the moustache black. No superciliary black streak in either sex. Length of male and female presented me by Lord Lilford twelve inches; beak one inch and six eighths; carpus to tip, in male six inches, in female six inches and three eighths; tail four inches; tarsus one inch and one eighth.

THIS bird is the representative of our Green Woodpecker in Central and Southern Spain, and was first separated from that bird by Mr. Howard Saunders in the P. Z. S. for 1872, p. 153. The following is the short notice given by that gentleman:—

“When my friends Messrs. Sharpe and Dresser were describing the Green Woodpecker (*Gecinus viridis*) in the ‘Birds of Europe,’ I lent them a specimen from Granada, Spain, which Mr. Sharpe at once perceived was not true *G. viridis*. But for a time and in the absence of a series we were disposed to refer it to *G. Vailantii* (Malherbe, Picid., vol. ii., p. 122, pl. 82.) I immediately exerted myself to obtain specimens of this bird from different parts of Spain; and I have now before me a series from four very distinct localities, all however south of the Sierra de la Guadarrama, which will probably prove



to be in this case, as in several others, the dividing line between the northern and southern resident avifauna.

"These specimens, agreeing amongst themselves, differ so strikingly from both *G. viridis* and *G. Vaillantii* that there can be little doubt of their belonging to a new and hitherto undescribed species, which I propose to call *Gecinus Sharpei*, sp. nov., after my friend Mr. R. B. Shape, to whom the credit of discriminating it is entirely due."

I have given the specific characters above. Mr. Saunders continues:—

"This species is principally distinguishable from *G. viridis* by the grey face, and by the absence of the black streak over the eye in both sexes. Minor points of difference are the brilliant crimson moustache in the adult male, instead of lake on a black ground as in *G. viridis*, and the deep chrome yellow on the rump in both sexes. In *G. Vaillantii* the moustache of the male is black, and never red, according to Malherbe (op. cit.); and in the female the crimson does not extend beyond the occiput, whereas in the present species it pervades the whole of the crown."

This bird affords a good example of slight, probably climatic differences of plumage giving a bird the title of "being distinct." It is only, however, a variety of the well-known Green Woodpecker, which it replaces in Central and Southern Spain. It has no claim whatever to distinct specific distinction. Into what it may be evolved in course of time it is impossible to say.

The egg, Mr. Saunders says, is always smaller than that of *G. viridis*. Its habits are, however, precisely the same.

By the kindness of Lord Lilford I am able to figure the male and female and egg from my own collection.

Figured by Dresser in his "Birds of Europe."

ORDER VII.—ALCYONES.

Family MEROPIDÆ. (Bonaparte.)
Genus MEROPS. (Linnæus.)

Generic Characters.—Beak middle sized, sharp edged, pointed, and slightly curved, the summit elevated and entire. Nostrils, basal, lateral, ovoid, and open, the opening hidden by having feathers directed forward. Feet with the tarsus short; of the three toes in front the most external is united up to the second articulation of the middle toe, and this with the internal up to the first articulation; the hind toe broad at its base; claws—that of the hind toe the smallest. Wings—the first primary very short, the second the longest in the wing.

BLUE-CHEEKED BEE-EATER.

Merops persica.

<i>Merops persica,</i>	PALLAS; Voy., 1776.
“ <i>savignyi,</i>	CUVIER. SWAINSON.
“ <i>aegyptius,</i>	FORSKAHL.
“ <i>ruficollis,</i>	VIEILLOT.
“ <i>superciliosus,</i>	RÜPPELL.
<i>Guépier Savigny,</i>	LE VAILLANT.
<i>Guepier meridional,</i>	OF THE FRENCH.
<i>Südlicher Bienenfresser,</i>	OF THE GERMANS.
<i>Blue-cheeked Bee-eater,</i>	SWAINSON.

Specific Characters.—Throat yellow; upper part of neck anteriorly, russet red; upper plumage various shades of green; superciliary ridge and a band below the eyes turquoise blue. The two middle tail feathers much longer than the others. Length from tip of beak to end of long tail feathers twelve inches; carpus to tip, five inches and three quarters; tarsus half an inch; beak one inch and three quarters; tail six inches.





THE Blue-cheeked Bee-eater is an inhabitant of Persia and Egypt, being found especially on the borders of the Caspian Sea. It extends along the shores of the Mediterranean Sea through Tripoli, Algeria, and along the Atlantic coast as far as Senegal; while, eastward, it ranges, according to Dr. Leith Adams, into the North-west of India, where it is not uncommon. Deputy Surgeon-General Stewart informs me that he procured a specimen at Kurrachee, January, 1862. "It was in a flock of seven or eight, which I at first took for *M. philippinus*, which it resembles in size and on the wing, although it is not I think so handsome a bird."

As might be expected, it is occasionally found on the European side of the Mediterranean, where, however, it occurs only accidentally. It was introduced into the European list by Bonaparte, from two specimens which were killed in the neighbourhood of Genes. It is also included by Count Mühlé among the birds of Greece, while Dr. Leith Adams informs me that it is found (but rarely) in that neutral territory, Malta. It is recorded ("Ibis," vol. i., p. 27,) by the Rev. Canon Tristram as occurring in the valley of the Jordan in Southern Palestine; and Dr. Heuglin says it appears in large flocks on the Somali coast of the Red Sea.—(Ibid, vol. i., p. 340.)

Salvadori (*Fauna d'Italia*) says:—"This Bee-eater is accidental in Italy. The first individuals were observed in Liguria. Durazzo says that in a flock of Bee-eaters into which he fired in 1834, two individuals, male and female, fell of this rare Italian species. The first I possess, and the other belongs to the Marquis Costa de Chamberry. These individuals have been described and figured in the '*Fauna Italica*' by the Prince of Canino. Lo Schembri records a Maltese specimen taken in 1840. Finally, Malherbe says that it appears accidentally in Sicily, having seen one taken in the neighbourhood of Palermo, which however is doubted by Benoit and Doderlein. It is an inhabitant of Africa and Asia."

In its habits the Blue-cheeked Bee-eater resembles the better-known species in our own fauna, *Merops apiaster*.

The male and female have the forehead marked by a white band; above the eye is a band of turquoise blue, with a similar one below, which is, however, slightly mingled with white feathers; from the angle of the beak straight through the eye is a band of dark green. All the upper parts of the body green, more vivid on the rump, and from thence shading off along the long tail feathers into green russet, while the tips are black. The wing primaries dark green, with the most internal part of the broad inner web dusky brown,

shading off into black towards the tip; under wing coverts and flanks a rich chesnut, like the chest, while the rest of the under parts of the wing, and those of the tail, are glossy hair brown. Throat yellow, going off into a darker chesnut on the crop; sides of the neck, abdomen, and under tail coverts, vivid Scheele's green; beak black; feet horn brown.

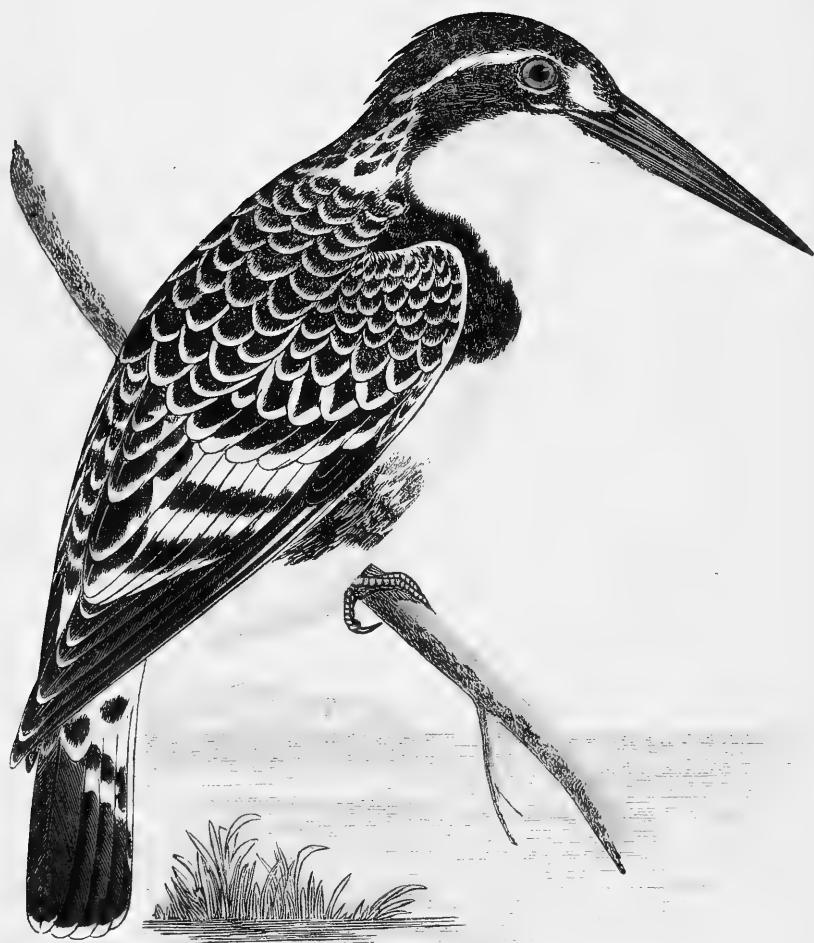
Temminck notices two varieties in his 'Manual,' fourth part, 1840, p. 651. The var. A, are specimens from Senegal, which, he says, differ in some of the tints of plumage, by having the two middle tail feathers longer, and by having shorter wings—differences which are seriously recommended to species makers. This variety has been figured by Bonaparte, in his "Fauna Italica," and by Le Vaillant, pl. 6, bis.

The other variety, B, which is that which I have figured, from Nubia and Egypt, has less blue in the green of the upper plumage, the middle tail feathers are rather shorter, and the wings slightly longer, reaching near to the end of the lateral tail feathers. This is Le Vaillant's *Guepier*, pl. 6. In my specimen, which was kindly sent me by Mr. Tristram, and marked "Egypt," the wings, when closed, do not reach to within an inch of the end of the lateral tail feathers.

There is still another variety found in Japan, the *Merops javanicum* of Horsfield, which is, however, easily distinguished by its bright blue rump.

According to Bonaparte, *Merops persica* of Pallas is different from the *Merops savignyi* of Swainson, a statement which it is impossible to admit for a moment. The bird I have figured is in all particulars precisely the bird described by Swainson as *M. savignyi*, the Blue-cheeked Bee-eater, "Birds of Africa," vol. ii., p. 77, pl. 7.

Figured by Le Vaillant, Hist. Nat. Promer, pl. 6 et 6 bis; Swainson, Birds of Africa, vol. ii., pl. 7; Bonaparte, Fauna Italica, pl. 25, fig. 1.



LACKLANDS HILT KINGFISHER.

ALCYONES.

Family ALCEDINIDÆ. (Bonaparte.)
Genus ALCEDO. (Linnæus.)

Generic Characters.—Beak long, straight, quadrangular, pointed, sharp edged, and very rarely depressed. Nostrils basal, lateral, obliquely pierced, and almost entirely closed by a naked membrane. Feet short, naked above the knee; three toes in front, the exterior of which is joined to the middle toe as far as the second articulation, and this with the inside toe as far as the first articulation. Hind toe broad at its base, and its claw the smallest. First and second wing primaries shorter than the third, which is the longest in the wing.

BLACK-AND-WHITE KINGFISHER.

Alcedo rufis.

<i>Alcedo rufis,</i>	LINNÆUS.
“ <i>ispida ex albo et nigra varia,</i>	BRISSON.
“ <i>ispida bicincta et bitorquale,</i>	SWAINSON.
“ <i>cerylevaria,</i>	STRICKLAND.
<i>Ceryle rufis,</i>	BOIE. BONAPARTE.
<i>Martin-pêcheur pie,</i>	OF THE FRENCH.
<i>Geschäckter Eisvogel,</i>	OF THE GERMANS.

Specific Characters.—Feathers of the occiput long and pointed; tail with a broad black band, tipped with white at its end; a broad black band across the crop, interrupted in the middle. Length from tip of beak to end of tail eleven inches and a half; from carpal joint to tip of wing five inches and a half; tail two inches and a half; beak two inches and a half; tarsus one third of an inch; middle toe and claw one inch.

THIS bird is only an accidental visitor to the European shores. It has been observed in Turkey, Greece, Italy, and Spain; generally

near the coast, on the European borders of the Mediterranean. In Africa it is most plentiful at the Cape and in Egypt. Swainson considered the Senegal species as distinct, and described it in his "Birds of Africa," under the name of *Ispida bicinta*, the Double-collared Kingfisher. It is found rarely, and only accidentally, in Algeria. One specimen only was seen by Mr. Tristram near Jordan, in Southern Palestine. It is stated by Mr. Taylor, in his Egyptian Reminiscences, ("Ibis," vol. i., p. 47,) to be abundant all the way from Alexandria to the First Cataract. In Asia we find it occurring in Turkey, Persia, India, and China, and Mr. Savile Reid informs me that it breeds in the Bermudas. Deputy Surgeon-General Stewart informs me that this bird is "a common species all over India, the Himalayas excepted. It is the only Kingfisher I know which does not seize its prey from a fixed perch, but hovers over it like some of the Terns or the Kestrel. I have several times dug down to its nest, in the mud banks of rivers. Eggs four or five, white and roundish."

In its habits it resembles the other Kingfishers. Mr. Taylor (op. cit.) says it is very tame and familiar in Egypt. "The food seems to be entirely fish. I have often watched it hovering over a shallow pool of water, and every now and then darting down and catching fishes, sometimes as much as three or four inches in length. This bird breeds in holes in the banks of the Nile."

In the colony of Natal, Mr. Gurney ("Ibis," vol. i., p. 245,) informs us that "it frequents the lakes and rivers near the coast; not found in the interior. This bird hovers over the water before darting down, and if not successful flies on further, and hovers again; having caught a fish it flies to a bough or a post to swallow it."

Mr. Swinhoe also, in his very interesting paper on the Ornithology of Amoy, ("Ibis," vol. ii., p. 49,) says that it is "very common on the river, where it is to be found at all seasons; it poises on the wing at a height above the water, and drops suddenly down to catch its prey. I have however seen it strike obliquely, when flying close to the surface of the water."

Like other Kingfishers this bird makes a nest in the holes of banks of rivers, and lays four or five eggs, which are white, glossy, and nearly round.

The plumage of the Black-and-White Kingfisher is very difficult to describe minutely, as almost each feather, as Swainson remarks, is varied in a different manner.

The male in breeding plumage has the crown of the head and its crest black, with longitudinal streaks of white; all the rest of the



1. BLACK-AND-WHITE KINGFISHER.

2. RUFOUS SWALLOW.

3. CRAG SWALLOW.

4. RUSSET-NECKED NIGHTJAR.

upper parts are a mottled black and white; primaries and tail black and white; the white line which springs from each nostril is "carried over the eye and ears, and is lost in the variegated feathers of the crest." All the under parts are pure glossy white, with a broad belt of deep glossy black across the chest, narrowed or interrupted in the centre; the flanks thinly striped with black. The iris, beak, and feet black.

According to Degland the female is rather less, has more white in the plumage, the black collar less extended, and sometimes there is a second, which may probably have caused Swainson to describe the Senegal species as distinct. He certainly gives no separate distinction of the sexes.

Before the first moult, the white of the upper parts is less pure, with a number of black dashes; the black collar on the chest is only faintly indicated by black spots; the beak is sensibly shorter than in the adult.

My figure of this bird is from a specimen in my own collection. The egg is from the Rev. Canon Tristram.

It has been figured by Buffon, pl. enl. 62, young, 716, adult male; and Gould, *B. of E.*, plate 62.

The Smyrna Kingfisher, figured in the first edition, is omitted in this, as I can find no authentic instance recorded of its occurrence in Europe, as surmised without any good authority by Swainson and Professor Blasius, who stated the European Turkish Isles as one of its habitats.

ORDER VIII.—CHELIDONES.

Family HIRUNDINIDÆ. (Bonaparte.)
Genus *CYPSELUS*. ILLIGER.

Generic Characters.—Wings with the first quill equal to second or the second longest; tail emarginate or forked; tarsus feathered in front at all events; toes and claws nearly equal, short, robust; hallux directed inwards and forwards—not opposable.

MOUSE-COLOURED SWIFT.

Cypselus pallidus.

<i>Cypselus pallidus,</i>	SHELLY; Ibis, 1870, p. 445.
“ “	DRESSER; B. of Europe, 1875.
“ <i>apus,</i>	L. WEBB AND BERTHELOT; Orn. Cau., p. 23, 1841. (<i>Nec</i> LINN.)
“ <i>murinus,</i>	BREHM; 1855.
“ <i>murarius,</i>	VERN. HAROURT; An. and Mag. Nat. Hist., fer 2, p. 437, 1855. (<i>Nec</i> TEMM.)
“ <i>apus,</i>	HEUGLIN; Syst. Uebers. Nord. Ost. Africus, p. 16, 1856. (<i>Nec</i> LINN.)

Specific Characters.—C. Cypselo apoda affinis, sed minor; pallide grisecenti-brunneus, gutture toto albo; pectore inferiore obsoleta albo marginato. Long. tot. 6.5, ala 6.5, caudæ 2.8, poll. angl.—SHELLY.

THIS species of Swift has for a long time been confused with the Common Swift, but it is, I believe, a good species, replacing the well-known *C. apus* as a rule.

We are indebted to Captain Shelly for the first determination of this bird in the “Ibis,” for 1870, p. 445, and I therefore with pleasure quote the following from the article in which this species is described.

VIREO, HORNED SWIFT.



"I have been for some time convinced that the Common Swift of Egypt forms an entirely distinct species from the well-known *C. apus*, under which name it has been included in the various lists of Egyptian birds. First it differs materially in the very pale brown of the entire body, and in the greater extent of the white on the throat. These constitute the most striking characters whereby it may be distinguished from *C. apus*. Furthermore the feet are smaller; indeed the bird is altogether smaller in bulk.

"I believe that *C. apus* seldom appears in Egypt. I could never detail a dark specimen, though I paid particular attention to the species, in order to confute the opinion of several naturalists at home, who were inclined to consider the Egyptian species identical with *C. apus*. If therefore I saw any bird out of the hundreds flying about me, which appeared to be a trifle darker than ordinary, I immediately shot it; but on every occasion the bird thus obtained turned out to be *C. pallidus*.

"Again several ornithologists were inclined at first to put down any Egyptian specimen as the young of *C. apus*; but it is impossible for that opinion to be correct, since I have shot *C. pallidus* as late as the 3rd. of May, and as early as the 12th. of February. Comparing my specimens with the young of *C. apus*, the colour of the latter is very much darker, and all the feathers have distinct white margins."

Lieutenant-Colonel Irby, in his recent work upon the ornithology of the Straits of Gibraltar, throws further light upon this bird, which he calls the "Mouse-coloured Swift," in which I have followed him, as it is always advisable in naming birds to adopt some peculiarity which they possess. He says, "This Swift is found near Tangier on passage, crossing to Europe in April and May. Some remain to breed; but it is the least common of the family, being seen alone or in pairs in company with *C. apus*, which circumstance makes it difficult to distinguish them. I found a pair in July, 1861, nesting in company with some House Martins; the nest was simply an old nest of that Martin, which the Swifts had appropriated, and contained two eggs of the usual *Cypselus* shape, their longitudinal circumference being 64.66 millemetres."—Favier.

"Though Favier says they are difficult to distinguish from the Common Swift, I cannot say so myself, but rather the contrary. They are occasionally seen near Gibraltar, and are said to arrive at Tangier somewhat earlier than the Common Swift, though I could see no difference in the time of their arrivals. Easily noticed on the wing by their light colour, they mix both with the Common and White-bellied Swifts.

"In May, 1874, when near Vejer with two ornithologizing friends, we found this species to be more abundant than *C. apus*, while curiously enough at Algeciraz (where, as mentioned, there are countless swarms of Common Swifts) I never could detect one single *C. pallidus*."

Two birds, male and female, kindly sent me by Col. Irby, marked 7th. May, 1874, Casa Vieja, Andalucia, have the following characters:—Male: has all the upper parts mouse-colour, with the ends of the primaries black, and all the other feathers lightly edged with white; forehead and cheeks lighter. Throat white; all the rest of the lower parts more brown, with the feathers more strongly edged with white. Tail deeply forked, an inch shorter than the long primaries. Under wing coverts greyish, with a series of cross lines of white on the shoulder. Rest of wing and under tail luteous dark brown. Length $6\frac{3}{10}$ inches. Wing from carpus to tip six inches. Tarsus, which is thickly feathered, one inch.

The female is larger, but in other respects does not differ from the male. Length nearly seven inches. Wing from carpus six inches and a half.

This bird has been figured by Mr. Dresser, B. of E., but the egg is, I believe, unknown to science. It is doubtless very similar to that of *C. apus*.



ORIENTAL CHIMNEY SWALLOW.

CHELIDONES.

Family HIRUNDINIDÆ. (Bonaparte.)
Genus HIRUNDO. (Linnæus.)

Generic Characters.—Beak very short, very much depressed, and broad at the base; upper mandible curved downwards at the point. Feet short, with three toes in front entirely divided, or united at the base only by a short membrane; claws much curved; wings long and pointed.

ORIENTAL CHIMNEY SWALLOW.

Hirundo rustica, var. *savignyi*.

<i>Hirundo savignyi</i> ,	LEACH. STEPHENS.
“ <i>rustica orientalis</i> ,	SCHLEGEL.
“ <i>cahirica</i> ,	LICHENSTEIN; Cat., 1823.
“ <i>riocourii</i> ,	AUDOUIN; Des. de l'Egp., vol. 13.
“ <i>boissonneautii</i> ,	TEMMINCK; Man. 3, p. 652.
<i>Cecropis savignyi</i> ,	BOIE; Isis, 1828, p. 316.
<i>Hirondelle de cheminée orientale</i> ,	OF THE FRENCH.
<i>Ostliche Rauchschwalbe</i> ,	OF THE GERMANS.

Diagnostic Characters.—Under parts of the body, from the crop to the base of the tail, of a dark chesnut. Length six inches; carpus to tip four inches; tail from base to end of lateral feather three inches; tarsus five lines; beak from gape to end of upper mandible seven lines.

THIS “permanent variety” of our English Swallow is found principally in Macedonia, Egypt, and Eastern Siberia. It is very common in Egypt, but is only found accidentally in Europe,—Spain and Greece being the localities noted by Temminck, Mühle, Lindermayer, etc.

Professor Blasius, in “Naumannia,” 1859, p. 254, has a paper upon this bird, which I will transcribe nearly entire, as it not only expresses

all we know about it, but contains some useful remarks upon the difficult question of "species."—

"At a meeting in Cöthea we learned through Olph-Galliard, that *H. cahirica*, Licht., was taken by Nager-Donaziens, at St. Gothard, and the specimen was exhibited. Later Laudamman Nager wrote to me that this is there the only Chimney Swallow, and that during the spring passage it is sometimes caught by boys with the hand. I also received specimens which did not differ in intensity of colour from African specimens. We may reasonably express surprise at an Egyptian species coming to St. Gothard, particularly so regularly according to Andermatt. In the following spring Baldamus found this bird breeding and pairing with *H. rustica* in Diebzig, and I have one of these specimens now in my possession. In the present spring (1859) I have also seen these Swallows breeding in Brunswick, and paired with the common *H. rustica*. Many specimens were brighter than the Egyptian *H. cahirica*; otherwise they resembled them. From other sources I have received intelligence that among Chimney Swallows individuals with red brown under sides have been found breeding.

Under these circumstances we can still affirm that this bird has been taken at St. Gothard; but it is not so clear that it is the only kind of Chimney Swallow which is found there. Dr. Glöger says that the very dark red House Swallow is very common in Sardinia, and also in Eastern Siberia, where, according to Pallas, the Chimney Swallow has a remarkably rust-coloured under side. As the different coloured birds pair together, and as in the same nest there are to be found from normal coloured parents—both colours—it is evident that the varieties blend one with another, and as there is very little difference in the forms and habits, so it is not well to maintain that there is a difference of species. But how is this question to be viewed? For example, as to climatic varieties? Our northern climate has under some circumstances produced the African form! No one can satisfactorily maintain that our northern dark rust-coloured Chimney Swallow was originally bred from the African! Nor can any one connect the one in the climate of Egypt with that in Eastern Siberia; far less can we deduce from the casual fact of the varieties pairing together, that the rust-colour of the Egyptian or Siberian Chimney Swallow is due to physical causes. The name climatic variety is only an arbitrary distinction."

"Or races? But races can only be comprehended with certainty within the same limits as climatic varieties. The young will without any intermediate form go back to that of the parents. Nature does not carry out this idea precisely."

"Perhaps sub-species? The comprehension of sub-species is so little

established in theory, and is so variably demonstrated in practice, that it gives no bounds to capriciousness."

"In short, are local forms one and the same species? But is not that a name without all philosophical or physiological consideration? Perhaps all the better if philosophy or physiology stood on weak ground. A distinction founded on fact is at least remembered by a matter of fact.* Would it not be advisable to make this matter of fact certain before we dispute about an idea? To do this we must know where the white and rust-coloured Swallows are known to dwell distinctly. How far, and in what statistic relation, the one form extends into the territory of the other, and in what relation there is a proportion between the two forms. We might then help each other to solve this riddle, and then we shall have no difficulty in being certain about the name."

This paper I think clearly establishes the fact of the identity of the variety which is the subject of the present notice with the Chimney Swallow. *They breed together.* Their habits and nidification are similar. They only differ in the colour of the abdominal plumage, in having a brighter black on the back, and perhaps a broader black collar round the neck.

The specimen sent me by the Rev. Canon Tristram, which I have figured, and the measurements of which I have given in my diagnosis, was killed in January, 1860, in Egypt, by W. C. P. Medlycott, Esq.

The plumage above is glossy black; below dark chesnut, with a broad black collar round the neck. Each of the tail feathers has a white spot on its inner web, giving the appearance of a crescentic band when viewed from beneath.

It has also been figured by Audouin, in plate 4, fig 4, of his "Expedition to Egypt." The drawings in this work were done by M. Savigny, after whom Stephens, in his edition of "Shaw's Zoology," named the bird.

* I append the German text of this passage:—"Oder enlich gar Localformen ein und derselben art? Aber ist das nicht ein Name ohne alle tiefere philosophische oder physiologische Bedeutung? Vielleicht um so besser, wenn die Philosophie oder Physiologie auf schwachen Fussen steht. Eine thatsächliche Bezeichnung erinnert doch wenigstens an einen Thatbestand."

CHELIDONES.

Family HIRUNDINIDÆ. (Bonaparte.)
Genus HIRUNDO. (Linnaeus.)

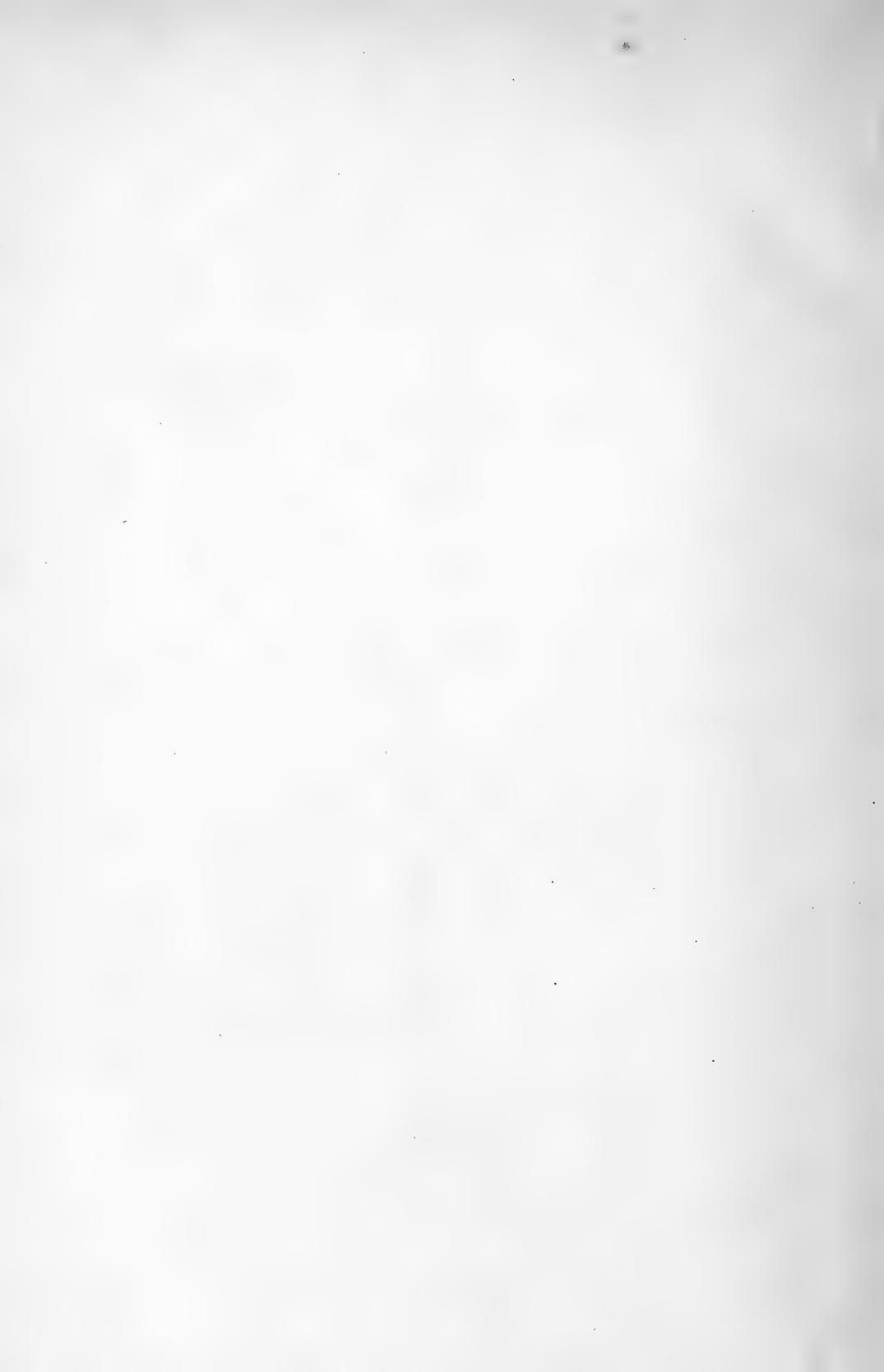
RUFOUS SWALLOW.

Hirundo rufula.

<i>Hirundo rufula,</i>	TEMMINCK; Man., 3rd. Ed., p. 298, (excluding synonymes.)
" "	SCHINZ; Europ. Faun., vol. i., p. 250, (excluding synonymes.)
" "	SCHLEGEL; Revue, 1844, p. 18 and 51.
" "	DEGLAND; Ornith. Eur., No. 155, the male.
" "	CRESPO; Faun. Mèrid., vol. i.; p. 309, the male.
" "	BONAPARTE; Rev. Crit., pp. 46 and 47. List of birds, (portion) No. 59. Conspect., p. 339, (excluding the synonyme of Rüppell.)
" "	JAUBERT; Rev. Zool., 1854, p. 261, the adult only.
" "	DE SELYS-LONGCHAMPS; Bulletin de L'Academie de Bruxelles, vol. 22, part 2, p. 125.
" "	NAUMANN; Vog., pl. 383, fig. 4.
" <i>daurica,</i>	LINNÆUS. SAVI; Orn. Tosc. BREE; first ed. DODERLEIN.
" <i>cahirica,</i>	PALLAS; Voyages, Appendix, vol. viii., p. 66, Lamarck's Edition.
" <i>alpestris,</i>	MALHERBE; Faune Orn. Sicile, (excluding synonymes.)
" "	BONAPARTE; Intr. Faun. Ital.
" "	KEYSERLING ET BLASIUS; Die Wirbelthiere, No. 201, (portion.)
" <i>eapensis,</i>	DURAZZO; Ucc. Lig., No. 45.



HIRUNDO - SWALLOW.



Hirondelle Rousseline,

rousse, or rufuline,

Rothliche Schwalbe,

Rondine di Siberia,

Hirondelle de Daurie,

OF THE FRENCH.

OF THE GERMANS.

SAVI.

LAMARCK; in Translation of the Voyages of
Pallas.

Specific Characters.—Medium size. Top of the head, back, wings, and tail black; the outer tail feathers for the most part faintly spotted with white; nape rufous, not striated; rump pale rufous, passing into whitish posteriorly; below the cheeks, and under wing coverts, russet, with very narrow brown striæ, which are however absent in the anal region; the posterior half of the under tail coverts black; feet moderate size. Length about seven inches; closed wings four inches and four fifths; external tail feathers four inches; tarsi half an inch; posterior toe (without claw) six tenths of an inch; posterior claw about a quarter of an inch.

THIS bird has been confounded with several others. It was first noticed in modern days by Savi, in 1831, in the “Ornitologia Toscana,” Appendix to vol. i., p. 201, as *Hirundo daurica*, Lin.—the *Rondine di Siberia*. It was afterwards introduced as a European bird in the second edition of Temminck’s Manual, as identical with *Hirundo capensis* of Gmelin, from which however it is clearly distinct. Temminck proposed for it the name of *rufula*, which it retained through the many scientific difficulties it encountered after his time. Temminck’s reasons for the change of name are hardly defensible. He thought that it was not right to use the word *capensis* for a European species, and he therefore translated the word *rousseline*, given to the Cape bird by Le Vaillant, into *rufula*. The next difficulty it had to encounter was from the Prince of Canino, who, after adopting the name of Temminck in his “List,” in 1838, applied the name *alpestris* in his “Catalogo degli Uccelli Europei,” in 1842. In his “Revue Critique de l’Ouvrage de Docteur Degland sur les Oiseaux d’Europe,” in 1850, he further adds to the confusion by describing it as a miniature *Hirundo senegalensis*, although it is at once distinguished from that bird by the black apex of the under tail coverts. He also united it with another distinct bird, the *H. melanocrissa*, of Rüppell. Schlegel, in his “Revue Critique des Oiseaux d’Europe,” of 1844, was the first to notice the confusion of the true *H. rufula* of Sicily with its congeners, namely, *H. capensis*, *H. alpestris*, (*daurica*), *H. senegalensis*, and *H. striolata*.

Keyserling and Blasius, in “Die Wirbelthiere Europas,” 1840,

describe as a European species the *H. alpestris* of Pallas, and identify it with *H. rufula*. Schinz, following Temminck, confounds *H. rufula* with *H. capensis*; while Degland, in his "Ornithologie Europeenne," in 1849, describes the male bird with the omission of the important character of the termination in black of the inferior tail coverts; but for the female he again falls back, and gives a description of *H. capensis*, in which mistake he is followed by M. Crespon, in the "Faune Meridionale."

Gould figures *H. senegalensis* for *H. rufula*. Lesson, in his "Traité Ornithologie," 1831, confounds *rufula* with both *senegalensis* and *capensis*. Rüppell figures *H. melanocrissa* for the first time, in 1845, in his "Systematische Ubersicht der Vogels Nord-Ost Africa;" and Bonaparte at once claims this bird as *H. rufula*. After which we cannot wonder that Blyth, Sykes, Hodgson, and Gray should more or less have confounded its synonyms.

M. de Selys-Longchamps has removed all this confusion by an admirable memoir upon the Swallows, in the work which I have referred to in the specific characters. I am indebted to this memoir for most of what I have to say about *H. rufula*.

The Rufous Swallow has been observed in Greece, on the Italian shores of the Mediterranean, and in the south of France. It is not observed in the two latter countries commonly, but accidentally on its passage in April or May, in couples or flocks more or less large. It has been frequently observed in Sicily. At Messina, according to Luigi Benoit and Cantraine, it was common in 1832. The Marquis Durazzo has recorded its appearance at Genoa; M. Crespon, at Nimes; M. Jaubert, at Marseilles. According to Lunel it nested in the neighbourhood of Avignon, in 1845 and 1846. He describes the eggs as white, with small reddish spots and points, which formed a zone at the greater end, which indicates that he did not get the egg of *H. daurica*. M. Jaubert has also observed it at Montpellier, and M. Malherbe in the Cote-d'or and the Drôme.

Salvadori (Fauna d'Italia) writes of this bird:—"Rare in Italy, but nearly every year some individuals are taken in Liguria. Also it is not very rare near Messina. Benoit says that in 1832 a great many birds of this species were confounded during the passage with the Common Swallow. Savi records one individual taken in Tuscany, where this Swallow was seen before he observed its being figured in Gerini's "Storia degli Uccelli." In the Museum of Turin there is a specimen which was taken in the neighbourhood of that city on May 2nd., 1832. According to Wright, it is rare in Malta. It has been observed by Heuglin in Egypt, Nubia, and high parts of

Abyssinia. It is wrongly named by him '*alpestris*,' which name belongs to a nearly allied species of Eastern Asia. This species has the same habits as the Common Swallow. According to Gerbe a pair nested near Avignon. The eggs were white, covered with rosy points, more numerous and disposed in a circle near the larger extremity. In form and dimensions it does not differ from those of the Common Swallow. It would be interesting to know if it is truly stated that some individuals of this species nested upon the cornices of the ancient temple of Segesta in Sicily. I consider that the bird called by Doderlein *H. cahirica* ought to be referred to this species."

Deputy Surgeon-General Stewart thus writes to me about the bird, "In January, 1872, near Belgauni, in the Southern Mahratta Country, I saw a very large swarm of this Swallow. I was walking along the road in the early morning, and the telegraph wire was covered for the space of more than a mile, (I measured it), more or less thickly with them, while numbers on the wing were flitting about their comrades. They had probably rested there all night. I cannot guess or attempt to estimate their numbers, but I never saw so many birds of any kind together before."

Mr. Tristram remarks, (*Ibis*, vol. i., p. 26,) "*H. rufula* appears to be the Common Swallow of the Holy Land. I cannot be sure that I saw *H. rustica* at all, though possibly it might not yet (April) have returned from the south."

De Selys (*op. cit.*) remarks about its real country as follows:—"The question was formerly asked from whence came our Domestic Swallows? It is now known they pass the winter in Africa; but this question may be still asked with good reason as to *H. rufula*. From whence does it depart, and what is its true country? No ornithologist has yet (1855) been able to answer this question. We only know the bird from its accidental appearance on the shores of the Mediterranean. Those who took it for *H. daurica*, (*H. alpestris*, Pall.) thought it came from Siberia, and this presumption might be justified by the simultaneous appearance in the same parts of the Mediterranean of many Siberian birds, such as *Emberiza rustica*, *E. aureola*, *E. pityornus*, *E. pusilla*, *Accentor calliope*, etc.; but if *rufula* is very nearly allied to *daurica*, there is still a difference between them; nor has it yet been found in Russia, or upon the coasts of the Black Sea. Prince Bonaparte seemed to have settled the question, by claiming its identity with *H. melanocrissa* of Abyssinia, but unfortunately we have seen that they are distinct."

"*H. rufula* being as we may say intermediate between *H. daurica* and *H. melanocrissa*, I am led to believe, in the absence of further proof,

that its home must be one of the mountainous countries situated between Egypt and India, probably the mountains in the south of Armenia or Persia. I exclude for the present the hypothesis of Barbary, as it has not yet been met with in Algeria or Spain."

"As far as we know of *H. rufula*, and until we can in a more positive manner determine the differences which age may introduce between this species and its congeners, it is distinguished from *H. daurica* by the exceedingly fine brown streaks on the inferior parts of the body, by the larger russet collar, and by the russet of the rump, which passes decidedly into a whitish tint posteriorly.

"It is distinguished from *melanocrissa* by the presence at all ages of the streaks on the under parts; by the absence of the anal russet border; by the less deep russet of the collar; by the brighter red on the rump passing into white posteriorly; and by the whitish spot which almost always is found on the external tail feather."

Since the above was written by M. de Selys, we have further accounts of this bird, which not only verify his prognostication as to the true country, but appear to remove all doubts as to the identity of *H. rufula* and *H. daurica*. I allude to the observations of Mr. Tristram, before noticed, that it entirely takes the place of *H. rustica* in the Holy Land and in Egypt. Also to the still more important and interesting account given of *H. rufula* by Mr. Simpson, (Ibis, vol. ii., p. 288,) where he describes it as inhabiting Missolonghi and Southern Ætolia, and further gives some most interesting accounts of its nidification in Western Greece, in the same volume, p. 386. Mr. Simpson describes the egg as white, which is further proof of the identity of this bird with *H. daurica*.

M. Ed. de Selys-Longchamps has very kindly sent me his Grecian specimen, which I have had very carefully figured; and through the kindness of Mr. Tristram, I am also able to figure one of the eggs taken by Mr. Simpson in Greece. M. De Selys accompanied the specimen with some valuable remarks, from which I extract the following:—

"As to *Hirundo rufula*, my statements are quite verified as to its country being the mountains of Eastern Asia, since Mr. Tristram (Ibis, vol. i., p. 27,) indicates it as the Common Swallow in the Holy Land. It must, however, be added to this that it inhabits Greece regularly, and not accidentally. (Ibis, Oct., 1860, p. 386, Mr. Simpson.) This observer gives valuable information in saying the eggs are quite white, like those of *H. urbica*: It is then more than probable that M. Lunel made a mistake when he said they were spotted. This discovery as to the eggs and that of its true country,

confirm me in my belief that this species is identical with *daurica*, as I had before supposed. I have in reality received from Siberia specimens of *daurica* which have the nuchal collar complete, and as to the brown streaks below the body being more or less marked, they are no doubt so according to age, of which I have proof in its congener, *melanocrissa*. The name of *daurica* ought to stand with the addition of a very doubtful race, which may be called *rufula*—*H. rufula*?

“Edward Newton’s Swallow, (Ibis, 1859, p. 462,) seen between Cairo and Alexandria, in Egypt, was probably *H. melanocrissa*. M. Jaubert, of Marseilles, has, I believe, figured and described in his work, ‘Richesses Ornithologiques, etc.’ the *H. rufula* of Marseilles. The work being at my country residence, I cannot quote it with certainty at this moment. My mounted specimen is without indication of sex.”

In Mr. Simpson’s very interesting account of some of the Birds of Western Greece, (Ibis, vol. ii., p. 386,) I extract the following about the nesting of *H. daurica*:—“*H. rufula* (*daurica*) is still more singular in its nidification, always fixing its nest under a cave or projecting slab of rock. In the little Klissoura, and throughout the precipices of Aracynthus, there are plenty of these caves, in former times a convenient refuge for the Klephtsas; they are now for shepherds tending their flocks during the winter months. This eccentric Swallow, not satisfied with having a good dry cave all to himself, must needs construct a long passage to his nest; thus giving it the shape of a retort, with the upper part cut away, and the remaining portion glued underneath a flat surface. The entrance is narrow, but the passage gradually widens till it finally opens into a sort of chamber, very warmly lined with feathers; here the little fellow and his mate are sure to be most snugly tucked in just after sundown, when they cannot see to catch any more insects. Escape therefore is impossible when a ruthless ornithologist wishes to capture the pair for the sake of identifying their eggs. No more than one pair ever seem to occupy a cave, though the remains of previous nests could occasionally be traced on the roof. The same pair appear to return year after year, and their nest, unless injured by shepherd boys during the winter, will merely require a little touching up to render it again habitable. The fact of the same birds returning was proved by these caves being untenanted, where the pair had been captured during the preceding year. Several nests with eggs were found towards the end of May and beginning of June, 1859. Four seems about the complement; they are quite white, much resembling eggs of *H. urbica*, which could be well passed off for them in collections.

"A curious circumstance in connection with one of these nests occurred to Dr. Krüper and myself, in a cave at the entrance to the little Klissoura. Fastened to the roof of this cave, (which was on the face of a low cliff, and not easy of access,) we espied a very good nest of *H. rufula*, (*daurica*) upon which Dr. Krüper proceeded to operate with a penknife, whilst I placed my hand over the mouth of the passage. Presently something that felt cold, like a dog's nose, began rubbing against the palm. On withdrawing the hand a thick snake poked his head out of the aperture, looked around for awhile, and then popped in again. He was in very good quarters, and evidently intended to take a lease of the premises, which just suited him, as he could coil himself up in the bulb of the retort, with his head and neck stretched out along the passage, in readiness for an emergency. We soon had him sprawling on the floor of the cave, when it became apparent that he had swallowed a full-grown young Swallow; the other three being in all probability destined for a similar fate. The sensations of those wretched little victims, lying in such close contact with their horrible enemy, must have been somewhat akin to those of Ulysses and his companion in the cave of Polyphemus. In the destruction of the nest two of them made their escape; the fourth was captured and preserved by Krüper, together with the first, which, on being cut out of the body of the snake, was found to be very little injured as a specimen. The walls of the cave were smooth and nearly perpendicular; the roof at least seven feet above the floor, and no cracks visible; how then could this monster have wriggled himself into such a well-stocked larder?"

Mr. Simpson further informs us that every European species of *Hirundo* and *Cypselo* (except, perhaps, *H. riparia*,) may be found breeding in Mount Aracynthus. *Hirundo rupestris* is the only Swallow which winters in Greece.

The late Mr. Gray, in his "Hand List," gives this bird as the *H. rufula* of Temminck, while to the Siberian bird, (the *H. alpestris* of Pallas,) he assigns the name of *H. daurica*. I see no reason whatever to alter the text of my first edition, but to make it quite clear that the bird I have described, and whose habits have been so well described by Mr. Simpson in Greece, is the same bird as is described by Pallas as *H. alpestris* and by Linnæus as *H. daurica*. I will quote the description of Pallas in full, from the appendix to Lamarck's edition of the *Voyages*, volume viii., p. 66:—

"No. 66. *Hirundo alpestris*, *Hirundo daurica*, Spicil. Zoolog. (Hiron-delle de Daourie.) Magnitudo suprar hir. domesticum, rostrumque paulo latius. Color verticis inter alas vaseos alarum, tetricamque

caudæ chalybeato aterrimus. *Area* utrinque triangularis, ob oculis ad nucham tempora occupans, ferruginea; hæ sæpius areæ in cervice confluent. *Uropygium* ad medium ferè usque dorsum pallidè ferrugineum. Subtus corpus sordidè albet, rhachibus lineariter nigris striatum. Subcaudales apice atræ. Cauda atra, nitida, maximè forcipata; rectrices quatuor mediae subæquales extima præsertim senioribus longissima, plerumque notata interius maculâ albâ, oblonga. Pedes inter congeneres majusculi fusci.

“Nidulatur in rupibus elatis et speluncis montanis ad altaicus, Sibiriæque reliquæ Alpes rarissime in ædificiis desertis. *Nidus* maximus, hemisphæricus, tuberculis limosis eleganter purissimèque exstructus, sine ullo gramine admixto; canalis ad aliquot pollices à nido extensus pro aditu.”

The following description is taken from the specimen sent to me by M. de Selys-Longchamps.

H. rufula has the top of the head and back metallic black; wings and tail dull black; cheeks and auditory region yellowish grey; nape and lateral parts of the occiput russet; rump tawny red, passing into yellowish white on the posterior half; throat, chest, abdomen, under tail and wing coverts, whitish, washed with russet, especially on the chest and flanks, and finely striated with brown, more distinct on the crop and throat; the terminal moiety of the under tail coverts well-defined metallic black; beak and feet blackish, the latter slender. The external tail feathers have almost always on their inner barb a small, whitish, oval spot, not well defined, and placed slightly in advance of the base of the feather, which is covered by the inferior coverts. M. de Selys informs us that M. Jaubert has a specimen which has a well-marked white spot on one of the great tail feathers, while the other is quite black.

As I have before mentioned, I am indebted to M. Ed. de Selys-Longchamps for the Grecian specimen which I have figured. I return him my very best thanks for this obligation. The egg is from my own collection, taken by Dr. Krüper near Smyrna. It is quite white, larger and rounder than that of *H. urbica* in the next compartment.

It has also been figured by Jaubert, Rich. Orn.; Dresser, B. of E.

CHELIDONES.

Family HIRUNDINIDÆ. (Bonaparte.)
Genus HIRUNDO. (Linnæus.)

CRAG SWALLOW.

Hirundo rupestris.

<i>Hirundo rupestris,</i>	SCOPOLI; 1768.
“ <i>montana et rupestris,</i>	GMELIN; 1788.
<i>Cotyle rupestris,</i>	BOIE. BONAPARTE.
<i>Ptyonoprogne rupestris,</i>	BONAPARTE.
<i>Hirondelle de rocher,</i>	OF THE FRENCH.
<i>Felsenschwalbe,</i>	OF THE GERMANS.
<i>Rondine montana,</i>	SAVI.

Specific Characters.—Upper parts ash grey, more or less dark according to age; primaries dark smoky brown; tail dark brown, the two upper and two most external tail feathers unicolorous; all the others having a large round white spot on the inner web. Length from tip of beak to end of long wings when closed six inches and a half; from carpus to tip five inches; tarsus five lines; beak seven lines; tail two inches and a half.

THE Crag Swallow inhabits Sicily, Sardinia, the Alps and Pyrenees, the north of Africa, and the eastern parts of Asia. It is also found in the Apennines, and in Tuscany, in Greece, and the Ionian Islands, and I have specimens from Malta, sent me by my friend Dr. Leith Adams. We have also records of its appearance in Egypt and the rocks bordering the Chiffa, in Algeria. In India, Dr. Leith Adams informs me that it is generally distributed over the Nilghiris Mountains, in Madras, and on certain parts of the Western Himalayas. In the Epirus we are informed by Lord Lilford, (*Ibis*, vol. ii., p. 234,) it is common and resident, “haunting the high and precipitous mountains of the



CUCULUS. A. B. U. V.

interior in summer, and coming down to the coast during the winter months." In the same Journal (vol. i., p. 46,) Mr. Taylor informs us that it is the most abundant of the Swallows above Cairo. "I found a nest of this species on the 25th. of January, in the grottoes of Ben-Hassan, containing two eggs nearly ready to hatch. Both nest and eggs much resembled those of the Common Swallow."

In his "Vögel Griechenlands," p. p. 118, Lindermayer says, "*H. rupestris* is a resident bird in Greece, and found plentifully in the low neighbourhoods in winter, flying in large flocks over the swamps and the low level grounds near the sea. In summer it is only seen in the high mountains. I have in the early days of March, 1845, killed many specimens in the mountains of Athens. Krüper found a nest with eggs in Akarnania and on Parnassus."

Salvadori (Fauna d'Italia) writes of this bird:—"This species loves mountains and rocks. Sometimes it establishes itself near the sea. It is found only in some places in spring, where it nests, and leaves in the autumn, although in other situations it is to be found in winter. Moggridge (Ibis, 1863, p. 233 et seq.,) gives a long account of a colony which lived all the winter near the bridge S'hingi, on the road from Nice to Geneva. I myself have found it stationary in Sardinia, having seen numbers fly in January near the grotto of Colombi, on the Cape of S'Elia. In February many occupy the grotto of Oridda, near Domus Novas. In the beginning of April I have seen them on the road from Ogliastra, in the neighbourhood of Flumendosa, and later, about the middle of April, about Capoterra, near the rivulet, where it was collecting mud to make its nest. It is rather common and stationary in many places in Sicily (Doderlein). It has been observed by Savi in various localities of the Tuscan Apennines; by Durazzo and Giglioli in Liguria; by myself near Ascoli, in the Apennines, and in the mountains along the Clusone, in the Province of Pinerolo. In all the above-mentioned localities it is only found during summer, and therefore we cannot doubt its migratory habits, as Tristram seems inclined to do. Though not mentioned in the fauna of Costa, there is nevertheless no doubt but that it is found in the Neapolitan territories. It is also stationary in Malta, but probably it is also a passenger, since Schembri asserts that it passes over that island in April and September. Cara affirms that when the other Swallows are gone, this may be often seen flying in the streets of Cagliari. It nests in the sides of rocks and in grottoes. The eggs generally five, white scattered over with obscure rusty spots, having a tinge of rose-colour."

Count Mühle, in his "Beitrage Zur Ornithologie Griechenlands,"
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page 81, says,—“In summer *H. alpestris* is only seen on high mountains, such as Taygetus, Æta, Velugi, etc. In cold clear winter days it first approaches human dwellings, and extends solitarily among them, and is seen in waving flights over the towns, which resemble much more the Bee-eater than the Swallow. Here they pass the winter, for I have shot them plentifully in the end of December.”

From Degland I take the following:—“*H. alpestris* is sufficiently common in Switzerland, in Savoy, and in the Pyrenees. I have received it from Bagnerre-di-Bigorre and Grenoble. M. Gerbe informs me that it is abundant in the department of the Basses-Alpes, near Moustiers, and in the Var among some of the high mountain rocks which border the River Argent. M. Crespon reports it from the department of Gard; and it is seen in its passage in some other spots in Provence, Languedoc, Anjou, and the department of Isère. It builds among the clefts in the anfractuosities of the rocks, making a nest of tempered clay, small straws, and feathers. It lays five or six white eggs, spotted with red, dark rust, or brown.”

“This species flies more slowly than its congeners, and always in regions most elevated. It almost always seeks its food in an undulatory flight above the rocks it inhabits. It arrives in Italy and in the south of France before the other Swallows, and leaves last. M. Gerbe thinks that some individuals hibernate in certain parts of Piedmont, near the borders of France; because when the winter is not severe, it is not rare to see them in the months of January and February flying above the mouth of the Var, and at Nice above the river which passes through that city. As this species moults before it emigrates, which is peculiar to it, M. Gerbe also suggests that those individuals which appear in a season where generally they are not seen again, are the young ones of the last brood, and that a retarded moult has obliged them to remain in our climate.”

Deputy Surgeon-General Stewart writes to me that he has procured it at all seasons at Simla and Mussoorie, North-West Himalayas, and in winter in the Valley of the Dhoon, at the foot of those mountains. Jerdon restricts its habitat to the Nilgirries and South-East Himalayas, “Darjelong.”

The male and female have the upper plumage ash grey, with the wings and tail darker. Throat light fawn, gradually becoming darker on the chest and abdomen; under wing coverts dark smoky brown; under tail coverts hair brown; the tail feathers, with the exception of the two median, and the two external, have an oval white spot on their inner web; beak blackish; iris hazel, or, according to M. Roux and M. Crespon, gold-colour.

According to Degland, the young before the first moult have the feathers of the upper parts bordered with russet; those of the inferior parts of a yellow russet, and the throat spotted with brown on a white ground.

My figure is after a specimen kindly sent me by the Rev. Canon Tristram, marked "Kedron, near the Dead Sea, March, 1858." The egg is from my own collection. It was taken in Switzerland by M. Fairmaire, and was sent to me by M. Nager-Donaziens, of Unserein.

The bird has also been figured by Naumann, pl. 146; Vieillot, Faun. Fr., pl. 39; Roux, Ornith. Provence, pl. 142; Bouteille, Ornith. du Dauph; pl. 38, f. 6; Gould, B. of E., pl. 56.

CHELIDONES.

Family CAPRIMULGIDÆ. (Bonaparte.)
Genus CAPRIMULGUS. (Linnæus.)

Generic Characters.—Beak very short, flexible, depressed, slightly curved, and cleft to beyond the eyes; superior mandible hooked at the point; furnished with stiff bristly hairs directed forwards. Nostrils basal, large, closed by a membrane, and partly covered by the feathers of the forehead. Feet with three toes in front and one behind; the anterior toes united as far as the first articulation by a membrane; the hind toe reversible; claws short, except that of the middle toe, which is long and serrated, so as to form a comb. Tail rounded or forked, composed of ten quills. Wings long; first primary shorter than the second, which is the longest.

RUSSET-NECKED NIGHTJAR.

Caprimulgus ruficollis.

<i>Caprimulgus ruficollis,</i>	TEMMINCK.
“ <i>rufitorques,</i>	VIEILLOT.
“ <i>torquatus,</i>	BREHM. GRAY, H. L., No. 614.
<i>Scotornis trimaculatus,</i>	SWAINSON; Birds of Africa, vol. ii.
<i>Eugoulevent à collier roux,</i>	OF THE FRENCH.
<i>Halsbandziegenmelker,</i>	OF THE GERMANS.

Specific Characters.—A collar of russet extending from the cheeks round the back of the neck, and joining on each side in front to a white spot on the throat; first primary shorter than the third. Plumage having a general rufous tint. Length twelve inches; carpus to tip eight inches; tarsus one inch; middle toe one inch; claw pectinated. Beak from gape fourteen lines; breadth at base one inch; tail six inches and a half.

THE Red, or, as I prefer calling it, the Russet-necked Nightjar, is a native of Africa, being occasionally found in various parts of Europe.



INZECKE KLOTTENIUS

The south of Spain and France, namely, Provence, Marseilles, Nimes, and Montpellier, are recorded as its European localities. To these, through the kindness of Dr. Leith Adams, I am able to add Malta, where a specimen was obtained by Charles Augustus Wright, Esq., from whose notes I copy the following:—

“In the spring of this year (1861) a native birdstuffer sent me word of a curious Goat-sucker having been shot a few days previous, (in the middle of May,) at Emtalitep, a valley situate on the southern coast of this island. When I saw it the bird had already been set up, but the skin was quite fresh, and there is no doubt about its being a fine specimen of *Caprimulgus ruficollis*. * * In addition to the localities given by Degland, I know it is included in an unpublished list of Egyptian birds in my possession, compiled from various sources by Mr. W. C. Medlycott. As far as my information extends, it has never been known to visit Sicily, or any part of Italy, except Nice, where it has been occasionally met with. There appears to be no previous record of its capture in Malta. I am glad to say that the subject of this notice passed into my possession, and now occupies a conspicuous place among my birds of Malta. *C. ruficollis* may be easily distinguished from *C. europaeus*, by its larger size, general rufous colouring, different proportionate length of primaries, two large white spots on the throat, and the reddish collar from which it derives its name. *C. europaeus* is a very common bird in Malta during the vernal and autumnal migrations. Before the capture of this species, *C. ruficollis* was unknown as a Maltese visitor.” A second instance of the occurrence of this bird in Malta is recorded in the “Ibis” for 1865, p. 464, by Mr. Wright.

C. ruficollis is apparently a rare and local bird in Europe, except Spain. It is not mentioned by Mr. Salvin, in his interesting “Five Months’ Bird-nesting in the Eastern Atlas,” nor in Lord Lilford’s “Notes upon the Birds of the Ionian Islands,” published in the “Ibis.” Neither is it mentioned by Count Mühle, or Dr. Lindermayer, as a visitor to Greece. It is included by the Rev. A. C. Smith in the “Birds of Portugal,” “Ibis,” 1868, p. 449.

In Mr. Tristram’s “Notes from Eastern Algeria,” however, I find the following, (Ibis, vol. ii., p. 374:)—“As evening drew near the Red-necked Goat-sucker, (*Caprimulgus ruficollis*), flitted about the glades, and the note of the Scops-Eared Owl floated on the air, with its plaintive ‘Maroof, maroof,’ from which it derives its local appellation.” It is also mentioned by Captain Loche as inhabiting the three provinces of Algeria.

Dr. D. Antonio Machado, in his “Catalogo de las Aves observadas

en Algunas provincias de Andalucia, Sevilla, 1851," says of this bird,—"It inhabits the woody flat ground of the mountains; it appears in spring, and leaves again in October: very common. It has no nest, but places its eggs in hollows in the ground, or under the shelter of some shrub. It frequents the roads where there is much horse or mule traffic, and the vulgar notion is that it feeds upon the dung which it finds there; but it is much more probable that it is in search of the beetles which live among it, and which are its principal food."

In Spain, the capture or occurrence of this bird is recorded several times by Lord Lilford (*Ibis*, 1866, pp. 180 and 379.) It is readily, he informs us, distinguished from *C. europaeus*, by its size and the general lighter colour.

Mr. Howard Saunders, (*Ibis*, 1871, p. 67,) writes of this bird in Southern Spain:—"Arrives in May, and is always to be found in the pine woods near Seville. The eggs, two in number, are as a rule a trifle larger than those of the preceding species (*europaeus*); but they vary so much that unidentified specimens are valueless. This species enjoys the same evil reputation for sucking the teats of goats and cows; but I never yet found a Spanish peasant who was idiot enough to class it with the Hawks as many of our English gamekeepers do its congener."

In the same volume of the "*Ibis*," Mr. J. H. Gurney, Junr., in his paper on the "Ornithology of Algeria" p. 73, remarks of this bird:—"On the 8th. of April at Guelt el Stel I saw three birds, which I suppose were of this species. They were evidently preying upon young locusts, with which the ground was so perfectly covered in places as to be black at a little distance. I saw them (apparently) pick up several insects from the ground. The previous evening a specimen had been given me at Air el Ibel, where the coach stopped. A sportsman brought it in alive, remarking that it was the only thing he had shot."

In the "*Ibis*" for 1872, Mr. F. Du Cane Gadman, in his paper on the "Migratory Birds of Madeira and the Canaries," p. 169, remarks:—"C. ruficollis, mentioned by Webb and Berthelot, as of accidental occurrence, though Bolle seems to consider it a regular summer visitant. The latter observer says it breeds in Lanzarote and Fuerteventura, and therefore ought to be included among the recognized birds of the Canaries. It is probable it does not extend to the western islands. I did not see it myself. Vernon Harcourt, on the authority of Mr. Hinter, gives *C. europaeus* as an occasional straggler in Madeira."

Mr. Savile Reid, from whom I have the eggs, informs me that it is the commoner of the two Goatsuckers at Gibraltar.

Salvadori, "Fauna d' Italia," says, "One individual was shot at Inthahless, on the south-west of Malta, towards the end of May, 1860, and preserved by Mr. Wright. A second on May 12th., 1865."

I have ventured to place among the synonymes of this bird that of *Scotornis trimaculatus*, as it agrees in every important particular with the description given by Swainson of that bird, in his "History of the Birds of Africa,"—"Jardine's Naturalists' Library," vol. viii., p. 70:—Singularly enough, Mr. Swainson seems to have overlooked the fact that the European Nightjar has three spots on the *inner* web of the three first primaries, and has claimed for his bird this exclusive character. Mr. Swainson gives eleven inches as the length of his bird, which is rather shorter than that of *C. ruficollis*, but the other and more important dimensions are the same.

There is another point of difference which I cannot help thinking is accidental. Mr. S. says, "The first primary quill is half an inch shorter than the second and third, which are of equal length, and the longest, while the fourth is an inch shorter, and the fifth is one and one fourth inches shorter than the fourth."

If the end of the above passage is transposed, and read, "While the fourth is an inch and a quarter shorter, and the fifth one inch shorter than the fourth," the whole will apply with perfect exactitude, like every other part of the description, to *C. ruficollis*.

I have no account to offer of the nourishment, habits, and nesting of this bird. But they are not likely I think to differ much from its European and closely-allied congener. There is the same wide mouth, with its array of bristles, and the same comb to clean them with on the claw of its middle toe. What a beautiful adaptive provision is this comb. Looked at through a lens, the teeth of the comb are seen to be placed with perfect regularity, and are admirably adapted to their evident use—to *clean* the bristles, an act which Dr. Maclean tells me he has actually seen performed by our Goat-sucker. The bristles are required as a fence for the large mouth, out of which otherwise many an insect would slip away. But the bristles get clogged up, and the God who made this bird has provided it with as perfect a comb to clean them with, as is to be found on the table of any lady in Europe! I should like to know how such a provision could have been given by "natural selection," or "variation," or by any other "aid to theory," which Mr. Darwin or Dr. Asa Gray would assign as the means by which this beautiful adaptation was produced? To imagine that this comb on the claw of the long middle toe is an accidental variation, is to surrender common sense. Still more absurd would be the inference that such a variation could have been produced by successive steps

through a long series of years. The bristles and the comb have a distinct relation to each other. They are parts of the organic structure of the being. Did they vary separately or simultaneously? Were they produced independently or in distinct relation to each other? How much more good would the Reviewers of Darwin do by going into questions like these, rather than giving us long and very often unintelligible and dull dissertations, in which fine writing is more aimed at than sound science. The physiological part of the question, evidently the most important, they seldom or never touch.

The prevailing tint of the upper plumage is grey, more or less tinged with rufous, which is the prevailing colour of the wings and all the inferior parts. The head has the sides grey, with a broad band of rufous, and dark brown longitudinal spots between. The nape is composed of the rufous collar which gives the bird its name. Back and upper tail coverts and feathers grey, barred and striated irregularly with rufous and dark brown. The scapularies and upper wing coverts light rufous, mingled with grey and rich dark brown. The lesser wing coverts, primaries, and secondaries, deep chesnut, barred with darker brown. The first three primaries have a large white oval spot on their inner web, each spot from the first being slightly nearer the tip of the feathers. The other primaries are tipped with grey, and more deeply bordered at the ends with the same colour darker.

The first primary is about half an inch shorter than the second and third, which are longest. The fourth is an inch shorter than the first, and the fifth one inch shorter than the fourth. Throat, cheeks, and chest, light rufous, with a large white spot on the former; abdomen still lighter rufous, finely barred with brown; under tail coverts fawn-colour. When closed the tail is grey above, divided into a cup-within-cup pattern, the intervals of which at the sides are fawn-colour; below the tail is fawn-colour, thickly barred with dark blackish brown, and terminating with white; the three lateral feathers on each side have this character above and below, while the rest are dark mottled brown, tipped and edged with fawn-colour. Beak black; feet and iris brown.

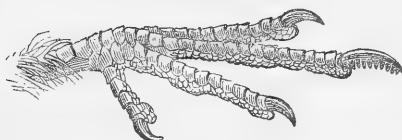
My figure is from a specimen sent me by the Rev. Canon Tristram, marked "Bojhar Forest, 29th. May, 1856." The egg is from one in my own collection, taken near Seville by Mr. Howard Saunders.

It has also been figured by Vieillot, Faun. Franc., pl. 62, fig. 2; Roux, Ornith. Provence, pl. 148; Gould, B. of E., pl. 52. A specimen is recorded by Mr. Hancock as having been captured at Killingworth, near Newcastle, on the 6th. of October, 1856, and in consequence it has been figured by Mr. Gould in his "Birds of Great Britain," but it has no title whatever to be classed among British Birds.

Caprimulgus climaturus, the African Long-tailed Nightjar, is mentioned to me in a letter by M. Dubois, of Brussels, as having been accidentally captured in Europe.

Mr. Swainson has separated the Nightjars into two groups. In that for which he retains the name of *Caprimulgus*, the two lateral toes of the foot are of the same length; in the other the inner toe is longer than the outer, and these he has classed under the generic name *Scotornis*, and it is to this group that *Caprimulgus climaturus* belongs. It is here I think that classifiers err. There is no family so well marked as a family as the Nightjars. In colour they so much resemble each other, that it is impossible to designate by this character alone one species from another. Why then divide the genus? Because some few members of the family have a slight difference in the lateral toes, surely we have no right to complicate their terminology by dividing the genus! So long as their structure, habits, and ornamentation are similar, a slight deviation in the length of a toe is, with all deference to Mr. Swainson, insufficient to constitute generic distinction.

The claims of *C. climaturus* as a European species are, I think, too slight to justify me in introducing it into this work, further than by the present notice. It is not included in the Hand List of Gray as European.



Foot of Russet-necked Nightjar, slightly enlarged.

ORDER IX.—COLUMBÆ.

*Family COLUMBIDÆ. (Leech.)**Genus TURTUR. (Selby.)*

Generic Characters.—Bill slender, very slightly arched at the tip; the two first quills graduated, second and third longest; tail rather long, generally rounded; toes long and slender; claws slightly curved.

EGYPTIAN TURTLE DOVE.

*Turtur senegalensis.**Turtur senegalensis,*

LINNÆUS. BONAPARTE.

“ “

GRAY; H. L. No. 9317.

Columba ægyptiaca,

LATHAM. BREE, 1st. ed.

“ *cambayensis,*

TEMMINCK.

“ *maculicollis,*

WAGLER; Syst. Avium.

Tourterelle d' Egypte,

OF THE FRENCH.

Ægyptische Turteltaube,

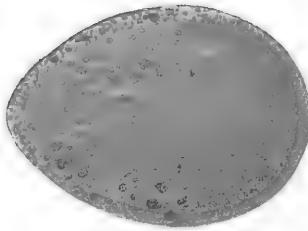
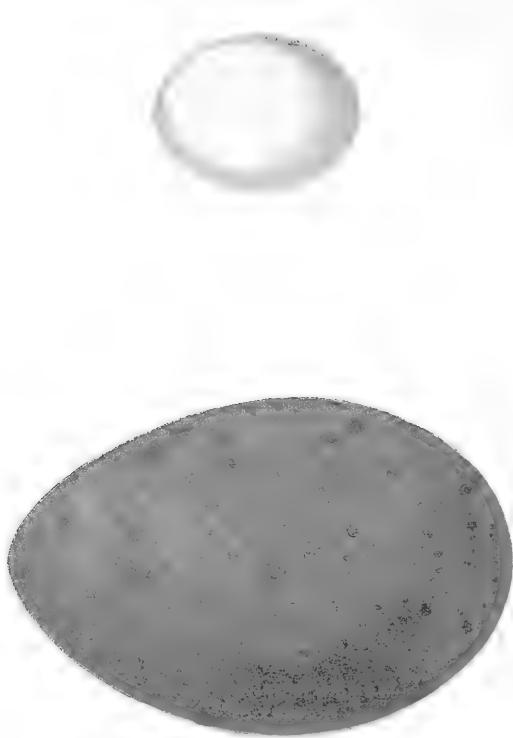
OF THE GERMANS.

Specific Characters.—External border of the wings black; the upper and middle four tail feathers unicolorous; the most lateral ashy at their base, black in the middle, and bluish white at their distal ends; no black and blue collar on the neck. Length nine inches and a half; carpus to tip five inches and a half; tail four inches and a half; tarsus nine lines; middle toe and claw one inch; beak eleven lines.

N.B.—The above measurements are from the dry skin of the female specimen which is figured.

GREECE is the European locality of the Egyptian Turtle Dove, and Asia and Africa its real home. Its name is derived from its frequent occurrence in Egypt; but it is also recorded as an inhabitant of Turkey by Degland, and of the Sahara in Algeria by Captain Loche.





1. EGYPTIAN TURTLE DOVE.

2. CAUCASIAN SNOW PARTRIDGE. 3. HAZEL GROUSE.

Count Mühle, in his "Ornithologie Griechenlands," says, "I have shot this pretty Dove many times in summer, when drinking with the Common Turtle Dove, but until the last year I had not regarded it as a distinct species."

Dr. Lindermayer, writing as late as 1860, in his "Vogel Griechenlands," says that he has not hitherto found it; but he has had the eggs sent to him which he had mistaken for those of the Bec-eater, until after due inquiry he was set right upon this point by the Baron König-Warthausen. The eggs came from Attila. He from this inferred that the Egyptian Dove arrives about the same time as the Common Turtle Dove, breeds at the same places, and goes away with it, by reason of which Lindermayer considers it has been so little noticed. Erhardt does not include it in his list, nor has Krüper discovered the eggs. There cannot however be any doubt about its occurrence in Greece, because Mühle's description of the bird is very exact.

The male and female have the head, neck, and throat, a beautiful pink, or flesh-colour, with the feathers under the base of the beak pure white. There is a *distinct collar* between the throat and the chest of pinky russet, which goes only to the nape, where it becomes blended with the colour of the back. From the nape to the rump, and to the edges of the wing coverts on each side, the colour is a rich lustrous russet brown, the scapularies being entirely of this colour, while in those parts at the sides which verge upon the wing coverts, the feathers are each bordered with a brighter russet. Primaries, rump, and upper tail feathers hair brown; upper wing coverts slate grey, lower dark brown; crop and chest a more vinous or darker flesh-colour than the head; abdomen and under tail coverts cream-colour; flanks and under wing coverts slate grey; under part of primaries light brown; under part of tail black at the base, then white, while the grey tips of the other feathers are seen beyond.

I find marked on the label of my specimen tarsi and feet flesh-colour; irides yellow; bill, bluish black, blue at base.

My figure is a female from a specimen sent me by the Rev. Canon Tristram, marked "Benyan, Dec. 1st., 1856." The egg is also from a specimen sent me by the same gentleman, marked "V. R., 1857."

It has also been figured by Temminck, in his celebrated work upon Pigeons, pl. 45.

Turtur gelastis, Temminck.—This is only considered a variety of the Common Turtle Dove—a larger bird with a redder-coloured ab-

domen. It has occurred in the south of Sweden; and Mr. Sclater tells us, "Ibis," July, 1861, that we may expect some day to see it in England. Without, therefore, in the absence of specimens, giving a figure, I will record here all we know about the bird.

The following is Nilsson's account, copied, translated, and kindly sent me by Mr. Wheelwright:—"The old bird about thirteen to fourteen inches long; wing from carpal joint eight inches. On the sides of the neck a black spot with four white transverse streaks. Wings above blackish, with broad rusty red edges to the feathers, which give these parts a scaly appearance. Tail rounded, black, with a broad whitish grey tip, the web of the outer feathers grey, the middle nearly free from the light tips. Back and upper parts blue; head and breast whitish grey, with a rusty tinge, especially in the breast; under tail coverts bluish white.—Stockholm Museum.

Young. Tail black, with a broad white tip, which is absent on the middle feathers; wings, etc., dark brown, with rusty yellow tips. Black spots on the sides of the neck scarcely visible.—Stockholm Museum.

This Dove, which was formerly only known in Japan, has of late years been met with in Sweden. In December, 1842, a young example was purchased in Stockholm in a load of other birds from Herjeådalei, where it was caught in the autumn. An older specimen was sent down alive by a ship-builder, named J. Peterson, of Piteo, to the Stockholm Museum. It was caught in a forest tract a mile and a half Swedish from the town. It was kept alive in Stockholm some time, but died December 20th., 1853, and is now preserved in the Museum as one of the rarest and most handsome of Swedish birds. According to Professor Sundevall, the note exactly resembles that of the Turtle Dove, (consequently not laughing, as the name would imply,) and the general appearance of the two birds is so similar, that were it not for the size it might easily be taken for a large variety of *C. turtur*. Professor Sundevall imagines that besides Japan it inhabits North-Eastern Asia, and that the yearling bird, which was caught in Herjeådalei, was hatched in the above-named province or in Lapland. In its native country it appears to inhabit rocky mountainous tracts."

Dr. Leopold Von Schrenck, in his "Reisen und Forschungen im Amur Lande," Vol. 1, Part 9, 1854-6, page 390, has a long account of this bird, from which I extract the following:—"This is only a geographical variety of *C. turtur*, distinguished by its greater size and by its darker colouring. The Amur Lande species resembles mark for mark the *C. turtur*, and in the tone of its colouring most resembles the description given in the "Fauna Japonica," especially the wings, tail

feathers, and upper parts; the under parts are brighter than in *C. turtur*, and the lower breast is of a clear vinous reddish, without the yellowish tint; round the neck and upper part of the breast there is less brownish, and more vinous reddish grey colouring. The under tail coverts and the tips of the tail feathers are in all our specimens grey, and certainly in spring of a somewhat darker bluish ash grey; in the latter part of summer, on the contrary, they are shaded into a greyish white.

"We also find in the young of *T. gelastis* the characteristic markings of *T. turtur*, namely, white on the tail and under tail coverts passing into grey, and on the belly into vinous red. Besides this *T. gelastis* has all the distinctive marks of the young Turtle Dove, especially on the throat and crop down to the breast, where the colour is grey brown, with rusty yellow edges to the feathers, without the glossy appearance; also on the primaries and secondaries towards the end the edges are broad rust brown, and the upper tail coverts, as well as the two middle tail feathers, have a slight rust brownish tip to each feather, passing into bluish grey borders in the middle of the feathers.

"In the next plumage the young birds have the iris two colours, in a sharply-defined ring; the inner part brown, and the outer yellowish. Beak bluish grey; feet violet grey. In the old bird in summer I have found the iris had its outer border in a slender whitish ring, and the inner part red; beak violet grey, especially towards the base; feet violet red."

Dr. Schrenck then discusses the opinions of other writers upon the specific difference of this bird. Temminck and Schlegel refer to the larger size of *gelastis*, and the former to the shorter tail and longer wing. Middendorff also notices the larger size of the body, while Pallas is of opinion that the same difference as exists between the two in size, may equally be observed between the Russo-European and the Daurian examples of *C. axnas* and *C. liria*.

The following is Dr. Schrenck's table of dimensions of the Amur bird:—Male.—Length of closed wings seven inches three lines, tail five inches, beak seven lines and a half, tarsi eleven lines and a half, middle toe (without claw) one inch, claw of middle toe three lines and a half. Female.—Length of closed wings six inches eleven lines, tail four inches ten lines, beak seven lines and a half, tarsi eleven lines and a half, middle toe (without claw) one inch, claw of middle toe three lines. Young.—Length of closed wings seven inches, tail four inches eleven lines, tarsi one inch, middle toe (without claw) one inch one line and a half, claw of middle toe three lines and a half.

On the whole, I think we may give *C. gelastis* to Mr. Darwin as a transitional variety. I will not, however, apologise for making a further extract from Dr. Schrenck's interesting notice.

Dr. Schrenck goes on to remark that the Turtle Dove has spread along the shores of the Pacific Ocean to Dauria, and in larger numbers eastward to the Stanowvi Mountains and to the coasts of the Ochotsk Sea, (according to Middendorff,) to the neighbouring country of the Amoor, and (according to Temminck) to Japan, where it assumes its largest form, and has the same variety of colours which have been described in *C. gelastis*. "In the Amoor I found *C. gelastis* very common, as well at the mouths of the rivers as also further outwards, and on the Ussuri. It is also found, according to the testimony of the natives, on the Island of Sachalin. On the Amoor it remains in the hazel woods, as well as among evergreens and willow bushes on the islands, and, as far as I have been able to observe, in the neighbourhood of water. I have often seen them a short distance from the river, on the level sand and pebbles, between light willow branches, sitting in pairs, or in small companies of four to six. At first I thought they repaired to such places only to drink or pick up small stones and coarse grains of sand, but the specimens which I shot shew me that they find their food there as well. I found¹ the crop filled with *Phrygane*, which is found abundantly, and of various kinds on the Amoor. I am not aware that this has ever been observed as the food of our Turtle Doves in Europe.

"Quite early in the spring this Turtle Dove appears on the Amoor. At the Nikolajev Posten I found them in the spring of 1855, the end of April; and it also appeared at the mouth of the river about the 8th. (20th.) of May, when the bushes were covered with ice, and there was still much snow in the forest.

"The moult begins among the old birds in the latter half of August, much later among the young ones, probably not until the old ones have completed their change.

"This Dove plays an important part in the religious ceremonies of the inhabitants of the Amoor, as does also the Cuckoo."

Further details of this interesting part of his subject Dr. Schrenck reserves for another part of the great work which is now throwing so much light upon the history of this interesting country.



CAUCASIAN SNOW PARTRIDGE.

CLASS—AVES.
DIVISION II.—AUTOPHAGI.

The young of which can more or less feed themselves from birth.

ORDER X.—GALLINÆ.
Family PERDICIDÆ. (Bonaparte.)
Genus TETRAO-GALLUS. (Gray.)

Generic Characters.—Beak much shorter than the head, broad at its base; upper mandible arched near the point, compressed, the commissure waved or undulated. Nostrils pierced in a semicircle at the base of a swollen cere, and surrounded by the feathers of the forehead. Wings subacute, the second and third primaries being the longest; tail large and rounded. Tarsi short and stubby, equal in length to the third toe, broadly shielded with scales; toes united by a slight membrane; the hind toe is short, and does not touch the ground; claws middle sized.

CAUCASIAN SNOW PARTRIDGE.

Tetrao-gallus caucasicus.

<i>Tetrao-gallus caucasicus,</i>	GRAY. BONAPARTE. SCHLEGEL.
“ <i>caspicus,</i>	GRAY; No. 9814.
<i>Tetrao caucasicus,</i>	PALLAS; Zoog., p. 76, No. 225.
<i>Tetragalle du Caucase,</i>	OF THE FRENCH.
<i>Kaukasisches Alpenhuhn,</i>	OF THE GERMANS.

Specific Characters.—Upper plumage grey. The feathers of the upper wing coverts and middle of the back broadly bordered with ochreous brown on their outer web. The long feathers of the flanks edged on both webs with still darker ochreous brown. Front of the neck marked with the brown horse-shoe, like the Grey Partridge. Length twenty-one inches and a half; carpus to tip eleven inches; tarsus and middle toe and claw each two inches and a half; beak one inch and a half long, and circumference at base two inches.

ACCORDING to modern views of classification we have now arrived at the second great division of the class *Aves*. The first division comprises all those birds, the young of which require attention in the nest from their parents, before they arrive at maturity in wing and limb. Hence they are called *Heterophagi*—those the young of which cannot feed themselves. We have gone through this sub-class, and have arrived at the second, or *Autophagi*—those the young of which can more or less feed themselves from birth. The former sub-class comprises the *Raptores*, *Passeres*, *Scansores*, and *Columbidæ*; the latter the *Rasores*, *Cursores*, *Grallatores*, and *Natatores*.

The arrangement is, I think, a good one. It is founded on a great natural division in the plan of development in birds, and which is beautifully adapted to the “circumstances of their existence.”

For this species and four or five others known as “Snow Partridges” or “Snow Pheasants,” Dr. Gray has established the genus *Tetraogallus*, signifying that it is intermediate between the Grouse and Pheasant or Partridge. I think, however, that the subject of the present notice might have very well stood at the head of the genus *Perdix*, leading us from *Phasianus* to the *Francolins*, and thence to the typical Partridges. As, however, it is the rule among ornithologists to group birds of similar structure and habits under a number of different genera, it is not for me to complain.

The Caucasian Snow Partridge inhabits that neutral ground, half of which is in Europe, and the other in Asia—the Caucasian Range. As its name implies, it is found there among the wild and desolate mountains which are covered with perpetual snow. It is therefore difficult of access, and we find very little recorded of its habits or nidification.

The Snow Partridge, living on neutral ground, must of course be classed among those birds more or less common to the continents—Europe and Asia.

Mr. Gould, in his “Birds of Asia,” mentions that he was informed by Prince Charles Bonaparte, that “there were reasons for believing that this bird occurs within the confines of Europe; he did not, however, mention the locality in which it has been observed.”

But surely if the bird is found in the Caucasus, or, as one of its names implies, on the borders of the Caspian, its European locality is sufficiently indicated. Mr. Gould further remarks “I had also been told by an officer of one of Her Majesty’s surveying ships employed in the Mediterranean, whose name I cannot recollect, that he himself had observed a bird of this form among the mountains in the island

of Candia, where, however, it was very rare, and only to be seen on the peaks of the hills; as this is a point of some interest in the history of this genus, I would beg to direct the attention of travellers to the subject."

Mr. Gould also inserts an extract furnished him by Mr. G. R. Gray, taken from one of the St. Petersburgh "Transactions," which is as follows:—

"This species builds on the highest summits of the rocky mountains of the Caucasus; it prefers altogether the regions of snow, which it never quits; thus when we desired to acclimatize the young chickens of this Partridge on the plains of Kahetia, they did but survive the spring.

It runs on the rocks of the ledges of precipices with great agility, and rises with a cry on the least danger, so that the most skilful sportsman cannot approach within shot, except under cover or mists.

They live in societies of from six to ten individuals, becoming the inseparable companions of the goat, on the excrement of which they feed during the winter months.

In autumn it grows very fat, and its flesh resembles that of the Common Partridge. In the crop of this gallinaceous bird I have found a great quantity of sand and of small stones, mixed with all kinds of seeds of alpine plants."

In the "Ibis," vol. i, p. 116, the Editor gives an extract from the journey of one Herr Kotschy into the Cilician Taurus in Asia Minor, in which this bird is incidentally mentioned as being found in company with the steinbock on the Taurus Mountains. He calls it "a noble bird with a fine sounding call." As this is more than half way from the Caucasus to Candia the statement adds strength to that of Mr. Gould.

The male has the top and sides of the head and nape what I have called Partridge grey. Scapularies and all the rest of the upper parts the same colour, finely dotted with light brown, and marked on the wing coverts with broad longitudinal markings of what I may also call Partridge brown, being similar to the well-known horse-shoe colour of our Grey Partridge. Primaries of pure white, with about an inch and a half of their distal extremities dull brown; the secondaries having their general colour the same, but the brown parts larger, and the outer web the same dotted grey as the upper parts. Throat and sides of the neck white, the two parts being separated by a broad band of Partridge brown, forming a double horse-shoe of that colour. From this double horse-shoe to nearly the middle of the abdomen, is a broad band of three inches and a half,

of colours apparently borrowed from the French Red-legged Partridge, but not so distinct, being dirty white with black transverse markings across the feathers; the rest of the abdomen grey brown. The long feathers of the flanks a lighter grey, broadly edged with the characteristic brown above described. Under tail coverts white; tail feathers rufous below, and the same colour above, but thickly spotted with small black dots. Beak horn-colour; the strong thickly scaled tarsi and toes reddish brown; the claws strong and obtuse. In my specimen, which is a male, and obtained by Mr. Tristram from Circassia, there is no vestige of a spur.

The egg is from a specimen in my own collection, which was sent to me by Mr. Schlüter, of Halle.

The bird has also been figured by Gould in his magnificent work, the Birds of Asia.





HAZEL GROUSE.

GALLINÆ.

Family TETRAONIDÆ. (Bonaparte.)
Genus TETRAO. (Linnæus.)

Generic Characters.—Beak short, strong, naked at the base; superior mandible arched, convex, and curved from its origin. Nares basal, half covered by an arched membrane, hidden by the forward feathers of the forehead; eyebrows naked, garnished by red papillæ. Feet with three toes in front; united as far as the first articulation; one toe behind, short: the edges of all pectinated. Tarsi feathered to the toes, and often even to the claws. Tail composed of sixteen or eighteen feathers. Wings short; the first primary short, the second shorter than the third, fourth, and fifth, which are the longest.

HAZEL GROUSE.

Tetrao bonasia.

<i>Tetrao bonasia,</i>	LINNÆUS, 1766.
<i>Gallina corylorum,</i>	ALDROVANDUS, 1599.
<i>Bonasia,</i>	BRISSON, 1760.
<i>Bonasia sylvestris,</i>	BONAPARTE, 1838.
“ <i>betulina,</i>	SALVADORI.
<i>Tetrastes bonasia,</i>	KEYSERLING ET BLASIUS, 1840.
“ <i>europaea,</i>	GOULD.
“ <i>betulina,</i>	SCOPOLI. GRAY; H. L. 9832.
<i>Gelinotte commune,</i>	OF THE FRENCH.
<i>Gemeines Huselhuhn,</i>	OF THE GERMANS.
<i>Francolino di Monti,</i>	SAVI.
<i>Hjerpe,</i>	OF THE SWEDES.

Specific Characters.—Feathers of vertex elongated; tail round, with a black fascia tipped with grey on all the lateral feathers; inferior parts of the tarsi and the toes naked; throat black in the male, yellow in the female. Length thirteen inches and a half; from carpal joint to tip of wing six inches and a half; tail six inches; tarsi one inch; beak nine lines.

THE Hazel Grouse is an inhabitant of many of the heathery or woody mountains and plains of Europe. It occurs in the north of Sweden and Norway, Switzerland, Germany, France, Italy, the Alps, Savoy, Verona, the Tyrol and Siberia as far as the River Lena. In France it is especially found among the Pyrenees, the mountains of the Vosges, the Dauphiné, and the Ardennes. It does not occur in Greece nor Holland, and is not noticed in Dr. Machado's list of the birds of Andalusia. Dr. Schrenck includes it in the birds of Amoor Land.

Salvadori (*Fauna d'Italia*) writes of this bird:—"Is found upon the Alps. It was formerly sufficiently numerous as to cover during its passage nearly all the Alpine regions. It is more rare now. It still lives upon the Venetian and Lombardian Alps, in the Tyrol, and probably also in Ticino. It was found many years ago on the Alps of Piedmont, but I now doubt whether it has not been destroyed. According to Risso it has also been found in the maritime Alps near Nice. It inhabits the groves of pine, fir, and birch trees. It feeds upon buds, berries, seeds, and insects. It nests under the boughs, in a small cavity, into which it places grass bents, roots, and leaves. It lays from ten to fifteen eggs, of a yellowish rosy colour, with brown spots and points.

"The name of Francolino, given to this species in many places, has led to the erroneous belief that it is the true Francolino, which it is not. There are various individuals brought over in the flesh with many others by Signor Cirio in the Museum of Turin. In these specimens the general tint is so decidedly ash-coloured as to make me doubt whether they do not belong to a species distinct from that of our Alps, in which the general tint is decidedly reddish or rosy. Brehm has already given this species from Russia as distinct, under the name of *Bonasia sylvestris*, (*Handbuch Vog. Deutsch.*, p. 514, pl. 25, fig. 2.)"

The late Mr. Wheelwright, of Gadsjö, in Sweden, living in the land of Grouse, has obligingly favoured me with some notes about this and the next species; such information, coming from the fountain head, always being most acceptable.

"The Hjerpe has never been met with in the south of Sweden, but is found in the woods of Dahl and in the south-west coast of Bohus Land. It is tolerably common in Oster Gothland. It is rare around Stockholm, but common in the more northerly parts; (Nilsson remarks that this appears the more strange since the same bird comes in numbers into Germany and even France. He thinks that if it were

introduced it would thrive in the rocky wooded tracts of North Scania.)

"The Hazel Grouse does not go so high up the fell sides as the Capercaillie or Black Grouse, and it disappears from the Norwegian fells long before we have reached the limits of the frost. According to Herr Von Wright, it is found up as high as Kengis, ($67^{\circ} 10'$), and even as high as Mounioniska. It is common in most parts of Wermerland."

"It frequents old thick forests, as well as young plantations of birch and pine mixed, and I think this is much owing to the season of the year. With us it is generally found in old fir forests with stony rises, and often at the foot of rocks in the aln and birch woods. In summer they appear to frequent leafy plantations, and with the fall of the leaf they withdraw into the fir forests, where they remain through the winter, only making occasional migrations into the nearest birch woods to feed on the catkins of the birch, which at this season forms their principal, and, I think, their only nourishment, for I never by any chance find any fir shoots in their crops, as I do in those of the Capercaillie. They appear always to be on the ground, and only fly up into a fir-tree when they are flushed. Their flight is noisy and bustling, and they never go far. I never find them by any chance in the open, like the Black Grouse."

"They live in a state of monogamy, and with us the pairing takes place about the same time as that of the Capercaillie or Black Grouse. The note is a soft rather melancholy pipe, which can be readily imitated by a Hjerpe whistle made of bone or quill. The call-note rather resembles 'li, li, titititi-ti.' The note of the male is stronger than that of the female. By this note, which we always hear from the ground, the sexes carry on their spring conversation, and in the autumn the mother uses the same kind of language to her young. As soon as the pairing is over the sexes divide. The males keep then single, and you never see three or four together. The female lays as many as from nine to twelve pale yellow brown-spotted eggs, in a hole in the moss on the ground. She makes no nest. She hatches the eggs by herself, and has all the care of the young. As soon as the young can fly, the male comes back to them, and the whole family live together during the autumn and winter. They remain throughout the year in those woods in which they take up their abode. I never saw more than one family together in our forests, though in Finland they are said to pack. In the beginning of April they separate into pairs, and the breeding season begins, although I never took a nest in Wermerland till the middle of May.

"In the north they are considered the most delicate of forest game, but they afford little sport to the real sportsman, as we generally shoot them from the perch. I think they are more shy and retired in their habits than any other of the Grouse."

"The beak is black, thick, and convex; upper mandible the longest. First primary shorter than the eighth, second shorter than the sixth; third, fourth, and fifth alike, and longest. Tail somewhat rounded. The crown feathers, which, in the male especially, are long, can be raised into a kind of crest. Over the eye is a small naked red spot, with small warts on the upper edge, but no comb. Tarsi generally only half, but sometimes three fourths covered with grey, soft, hairy feathers; the naked part grey brown, covered with divided half rings. Toes grey brown, covered with half rings, and on the sides with scales, under which they are fringed with combed teeth; claws pale brown."

"It varies much in size. From the northern tracts the male is generally from fourteen inches to fourteen inches and a half long; extent of wings twenty inches; tail four inches and six eighths, extending beyond the wings three inches and a half; tarsus one inch and a half." The above is Swedish measure, in which the inch is a quarter of an eighth shorter than ours, and, I have no doubt, refers to freshly-killed specimens. The dimensions in my diagnosis are those of a fine male sent me by Mr. Wheelwright, which is figured.

"Head above, neck, and part of the back brown or grey brown, with black transverse streaks; shoulders rusty brown, with black spots, and in the outer edge a long white streak. Wing coverts grey brown, with white spots; back and rump ash grey, marked with longitudinal black streaks and small black points; chin and throat pure black, with a white edging. Behind the nostrils a white spot, and a small one behind the eye. Front of neck rusty brown, with a black streak before the white edge of each feather. This black streak and the white edge is broader on the breast and belly, on which account it appears white with black or brown red transverse spots. On the sides the red brown colour is more apparent. Wing primaries dark brown, speckled on the outer web with rusty yellow and brown. Secondaries same, with rusty yellow edges on the tips. Tail feathers black, speckled with ash grey, and a pure black band before the tip, which is pale ash grey, often speckled with black. The two middle feathers speckled with brown and black, and marked with seven or eight confused black and ash grey transverse bands. Iris, in a freshly-killed specimen, brownish."

"Summer dress. The feathers on the head and neck are much

shorter than in winter; chin and throat are rather brown than black."

"The female is from an inch to an inch and a half shorter than the male, and has a rusty yellow (not black) throat. Between the beak and the eye a red brown (not white) spot. Otherwise resembles the male.

"Accidental varieties occur with paler colour, so that they are only brownish where the usual colour is black. According to Nilsson this is the *Tetrao canus*, the original of which is preserved in the Stockholm Museum."

I have thought right to give Mr. Wheelwright's account in full. With the bird before me I have been able to verify the correctness of the description. Mr. W. himself, if at all on any point in doubt, referred to Nilsson's excellent history of these birds in the "Fauna Skania." To use his own words,—"I have referred in part to Nilsson, and verified his remarks by my own experience."

From the north-west of Europe it is interesting to follow this bird into the far-off north-east of Asia, where it was found in great plenty by Dr. L. Von Schrenck. The account is so interesting as it regards the geographical distribution of this species, that I will add a translation of Dr. Schrenck's notice, from his "Reisen und Forschungen in Amur Land."

"The Hazel Grouse of the Amoor Land entirely agrees with that of Siberia and the west of Europe, except in having a greater proportion of ashy grey, and underneath the feathers more rusty brown; the whole length of the back is of a clear ashy grey, with fine dark bands and pointed marks across; the shoulders are partly rusty brown, and there is also a little upon the upper and under wing coverts; also round the crop there is a rusty brown among the black and white streaks. At the side of the breast there is a lively rust-colour, which, however, is very scanty, and rapidly passes into a lighter shade.

"The Hazel Grouse is found in the whole of Amoor Land as far as I know it, from the southern coast of the Ochotsk Sea to the Bay of Hadshi, and on the island Sachalin, as well as at the mouth of the Amoor to the sources of the river in Dauria. Everywhere, and at all seasons of the year, it is the most common of the feathered tribe. Scarcely any locality can be named where it is not found, yet it appears principally in the north of the Amoor, on the borders of rivers in the mixed forests of birch, aspen, poplar, alder, and willow bushes, and in the south principally in the light-foliaged woods and the underwood which grows along the rocky banks of the rivers. Not unfrequently, also, I have met with it in winter and summer on the willow-grown islands, or on such shores as those of the Amoor,

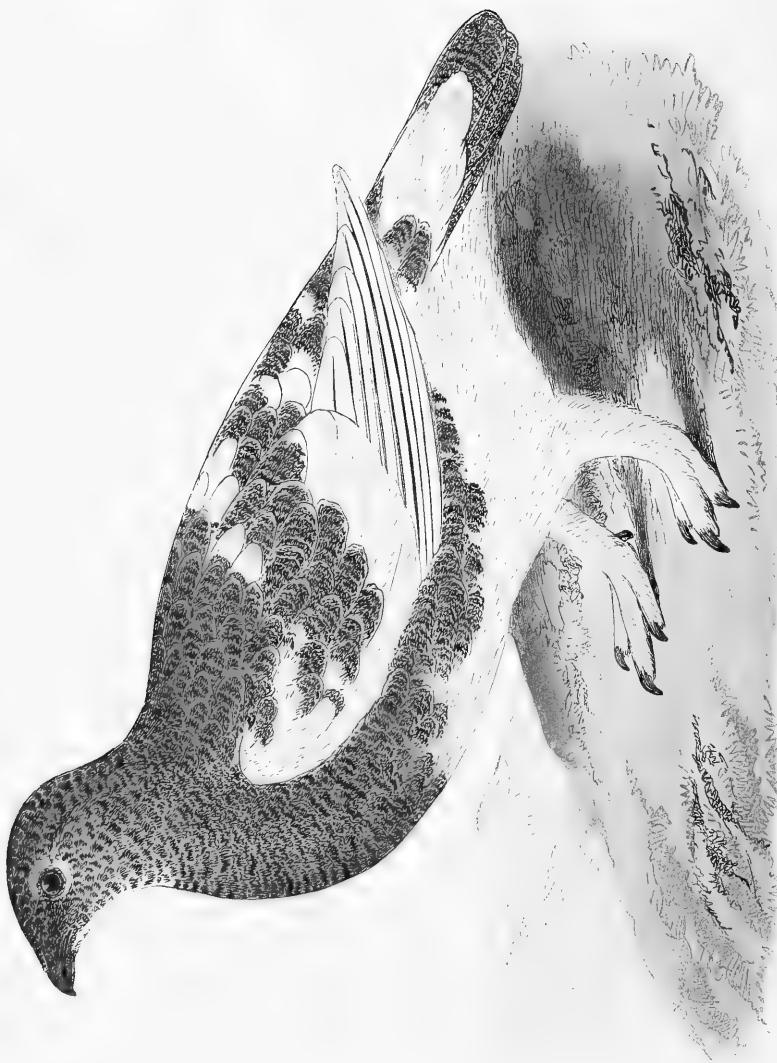
Gorin, and Ussuri. In as great numbers did I find the Hazel Grouse in the wildest parts of the Amoor Land, where it was by no means shy. In the Nikolajev Posten, and on the River Tyrny, in Sachalin, I have been able to shoot several times at a pair of individuals in a tree before the others flew away. In Sachalin, and on the Gorin, they flew up before us and kept in a circuit round about us. In summer, when the noise of our movements roused them, they often settled down on a tree close by the river, enabling us to shoot them from our hiding-places. They were among the daily contents of our game-bag in the Amoor Land, where, as well as in the Bay of Hadschi and the snow-fields of Sachalin, they gave us as good sport as in the light and sunny oak hedges on the Ussuri.

"In the summer of 1855 I found a nest with eggs on the borders of the Lake of Kidsi. It was in a fir wood, at the foot of a tree, concealed in the moss and brushwood. The eggs were of the usual dark yellow, with many brown spots and points, and were hatched on the 14th. of June. On the 28th. of July I met with a family just fledged at Pachale, near the mouth of the Gorin, in the leafy under-wood of a pine forest. The moultting of the Hazel Grouse takes place at Nikolajev Posten in August and September. On the 23rd. of August I found the moultting far advanced, and every wing and tail feather freshly grown. It was quite concluded on the 1st. of October."

My figures of this bird and its egg are from specimens sent me from Sweden by Mr. Wheelwright.

The bird has also been figured by Aldrovandus, Ornith., pl. 82; Stor, Degli Uccelli, pl. 238, (male;) Buffon, pl. enl., 474-479; Roux, Ornith. Prov., pl. 254; Bouteille, Ornith. du Dauph., pl. 41; Naumann, Vogel Deutsch., pl. 158; Gould, B. of E., pl. 251.





SPI TÅ BERGEN PÅ ÅR MIGGAN.

GALLINÆ.

Family TETRAONIDÆ. (Bonaparte.)
Genus LAGOPUS. (Linnaeus.)

Generic Characters.—Beak conic and curved; nasal groove densely clothed with feathers. Tarsi and feet plumed. Tail of sixteen to eighteen feathers. They moult twice a year, becoming white in winter, when they are gregarious or monogamous.

SPITZBERGEN PTARMIGAN.

Lagopus hemileucurus.

<i>Lagopus hemileucurus,</i>	GOULD; P. Z. S., 1858, p. 354.
“ “	DRESSER; B. of Europe.
“ “	EVANS AND STURGE; Ibis, 1859.
“ “	G. R. GRAY; Hand List.
“ <i>hyperboreus,</i>	ELLIOTT; Monograph of the Tetraonidæ.
“ <i>hyperborea,</i>	MALMGREN; Journ. für Orn., 1865.
“ <i>alpina var. hyperborea,</i>	GAIMARD; Voyages en Scandinavia, Atlas, livr. 38, plate (no description.)
“ <i>mutus,</i>	G. R. GRAY; 1844, List of Birds in the British Museum.
“ <i>alpinus var. hyperboreus,</i>	SUNDEVALL.
<i>Tetrao lagopus,</i>	ROSS.
“ <i>alpinus,</i>	TORELL; Bidrag till Spitzbergen.
<i>Ice Bird,</i>	MARTEN.

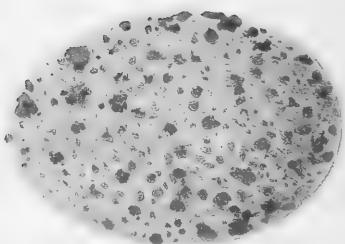
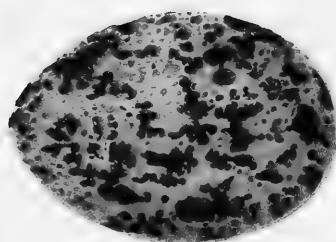
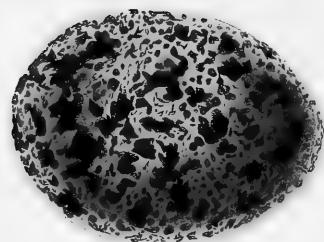
Specific Characters.—Tail white at the base and tip; from the central white bar to the end black, tipped with white, and the two central and two outer feathers broadly edged with white. General plumage above golden buff, mottled with black in autumn. Quills in winter have a dark median stripe.

THE Ptarmigan of Spitzbergen seems to be distinct from our own, and I therefore accord it a place in my book. Its history is short. In 1858 Mr. Gould gave a description of the bird in the P. Z. S., p. 354. Since then it has had various opinions expressed upon its character as a species or as a mere variety of *Lagopus rupestris*. Professor Newton, Sundevall, Von Heuglin, Elliott, the late Mr. Evans, and lastly Mr. Dresser have held various opinions. At first in doubt, Professor Newton is, I believe I may now say, convinced of its distinctness, while the rest seem to have no doubt, and Mr. Dresser founds his opinion upon structural differences in the colour and markings of the tail. We will look into the statements made.

First, Mr. Gould, in P. Z. S., 1858, thus describes the female in summer plumage:—"As is the case with all other Ptarmigans in their summer plumage, the primaries are white, in this species most of the secondaries and the wing coverts are also white; the remainder of the plumage is rayed with black and ochreous yellow, the black predominating on the upper surface, while the feathers of the flanks are beautifully and equally barred with these two colours; feet white, the nails jet black, and the bill brown. Total length about sixteen inches, wing eight inches and a half, tail five inches and a half, tarsus one inch and three quarters."

Professor Newton, in the Ibis for 1865, p. 502, gives a very good account of this bird, but ends by doubting whether it be distinct or not from *Lagopus rupestris*. The Ibis for 1871 contains a further communication from the Professor, in which he concurs that the species is a good one. Mr. Dresser has no doubt upon the subject; and I believe I may say that most naturalists are of the same opinion.

From Professor Newton's first paper in the Ibis I copy the following:—"The Ptarmigan in Spitzbergen is not a common bird, though it has been met with in several localities on the north and west coasts. Marten found his 'Ice Bird' (if that is to be referred to this species,) on the shore of the English Bay, where Lord Dufferin ('Letters from High Latitudes,' p. 316,) subsequently mentions his having met with two or three dozen and killing sixteen. Parry's party found it in Hecla Cove. Professor Sundevall, who accompanied the French Expedition of 1858, obtained the example which was the subject of Herr Von Wright's figure, and is now in the Stockholm Museum, in Bell Sound. Messrs. Evans and Strange describe it as being in 1855 rather numerous and breeding in Coal Bay, where my companions last year searched for it in vain. Dr. Malmgren, in his former voyage, found it in Wide Bay, Brandywine Bay, and Loom



1. SPITZBERGEN PTARMIGAN.

2. WILLOW PTARMIGAN. 3. PIN-TAILED SAND GROUSE.

4. SAND GROUSE.

Bay, and, as I have before mentioned, obtained the specimen I saw with him far up the North Fjord of Ice Sound."

"One of the two eggs from the only nest found by Messrs. Evans and Strange was kindly presented to me. It is rather small for the general size of the bird when compared with others of the genus, measuring 1.65 by 1.22 inches, but of course is thoroughly *Lagopiden* in character. I do not think any other eggs of this bird have been brought from Spitzbergen."

Messrs. Evans and Strange (*Ibis*, 1859, p. 169,) thus describe their discovery of this bird:—"During the time we lay here we made many excursions along the shores of this fjord, but the depth of the now melting snow prevented us from going any distance inland. On one occasion, after ascending about two-thirds of a high mountain, we shot a few birds, including a brace of Ptarmigan. We afterwards found these birds very abundant, and exceedingly tame; but most unfortunately, as it turned out, only preserved the skin of one (a female) specimen. This has since been submitted to Mr. Gould, and that celebrated ornithologist has described it as new under the title of *Lagopus hemileucurus*. It is therefore unnecessary for us to give a detailed account of this new European bird; we need only say that it can be at once distinguished from the Common Ptarmigan of Great Britain and Scandinavia by its larger size, which fully equals that of the Willow Grouse (*L. albus*, Bonaparte,) and from this again by its tail, the basal half of which is white. The general plumage of the female in summer much resembles that of the female Common Ptarmigan at the same time. All the males we saw were still in the winter dress, though their white feathers had become very dirty; but the females had changed. In the same neighbourhood one of us found a nest of this bird, if nest it could be called, being formed only of a few long stems of dry grass, bent down in a trench-like hollow in the barren fjeld (or high table-land), where the snow had been thawed, or perhaps been blown away, which latter might have been the case, so bleak and exposed was the situation. There were two eggs, which resemble those of others of the genus. One of them measures 1.6 inch in length by 1.22 in transverse diameter."

The following is Professor Newton's second letter to the *Ibis* for 1871, p. 249:—"On a former occasion I expressed a belief that the *Lagopus* of Spitzbergen, first described by Mr. Gould under the name of *L. hemileucurus*, was identical with *L. rupestris*. I now state that I have much doubt on that point, and that I am inclined to recognize its distinctness. Hofrat Von Heuglin has within the last few days kindly sent for my inspection some birds' skins collected by him

in that country last year. Among these are three specimens of *Lagopus*, and on comparing them with a tolerably good series of examples of *L. rupestris* from Greenland (*L. reinhardti*), and Iceland (*L. islandorum*), I find that the rectrices of all the Spitzbergen birds are so much variegated with white, as fully to deserve the name applied to them by Mr. Gould, while those of *rupestris* are invariably black, except in some cases at the tip. Furthermore one of the Spitzbergen birds marked 'male' by Herr Von Heuglin, though apparently fully coloured on the breast and back, is of a very different shade from any male of *L. rupestris* that I remember having seen. Under these circumstances, I think that it is quite possible that *L. hemileucurus* is entitled to specific rank, though it is certainly more nearly allied to *L. rupestris* than to *L. alpinus*."

A male specimen, kindly lent to me by Professor Newton, of the University of Cambridge, and belonging to the museum there, marked "A. E. Eaton, M.A., Trinity," has the head, neck, and cheeks mottled with rufous and brown; on the back two shades of brown with white feathers; wing with the primaries and secondaries white. Tail coverts white; tail black and brown and white feathers; breast black and brown. Abdomen white. Feet clothed with white to the toes. Inner part of wings white. Length seventeen inches, wing eight inches and a half, tarsus one inch and a half.

The skin from which my figure is taken belongs to the Museum of the University of Cambridge. It was shot by Mr. Eaton, who presented it to the University.

The egg is from an admirable drawing made for Professor Newton at Cambridge by Mr. Rippon from the unique egg in the united collection of Professor Newton and his brother Edward. In sending to me this drawing the Professor remarks, "It is a most faithful portrait, and the colours are as accurate as is the shape of the markings." I need not say that the thanks of the oological world are due to Professor Newton for thus giving us a fac-simile of this rare and beautiful egg.

This bird has also been figured by Dresser in autumn plumage, which is much more golden.



WILLOW PTARMIGAN.

GALLINÆ.

Family TETRAONIDÆ. (Bonaparte.)
Genus LAGOPUS. (Linnæus.)

WILLOW PTARMIGAN.

Lagopus saliceti.

<i>Lagopus saliceti,</i>	SWAINSON.
<i>Tetrao saliceti,</i>	TEMMINCK. BREE; 1st. Ed.
“ <i>lagopus,</i>	LINNÆUS.
“ <i>albus,</i>	GMELIN.
“ <i>subalpina,</i>	NILSSON.
<i>Lagopus albus,</i>	BONAPARTE. GRAY, H. L., 9835.
<i>Lagopède des saules,</i>	OF THE FRENCH.
<i>Morast-Schneehuhn,</i>	OF THE GERMANS.
<i>Dal Ripa,</i>	SWEDISH.
<i>Dalrypa skogsrypa,</i>	NORSK.
<i>Mezakana,</i>	FINNISH.
<i>Riefsak,</i>	LAPP.
<i>Willow Grouse,</i>	OF AUTHORS.

Specific Characters.—The primaries, abdomen, and feet white in the adult in all seasons. Tail square, of fourteen feathers, and always black. First primary one inch and three eighths shorter than the second, which is two eighths of an inch shorter than the third, which is equal to the fourth, and longest, the fifth always longer than the second. Length of male fifteen inches and a half; expanse of wing twenty-four to twenty-five inches; from carpus to tip eight inches; tail five inches, extending beyond the closed wings about three inches; beak, from forehead, seven eighths of an inch,—from nasal furrow half an inch; breadth of that part of beak three eighths of an inch; tarsi one inch and a half; middle toe one inch and a half; hind toe half an inch. No black mark from the gape through the eye. The female varies from half an inch to an inch shorter than the male.

THE Willow Ptarmigan is an inhabitant of the north of both Europe and America. Its home is, however, more especially in Sweden and Norway, Lapland and Greenland.

In Sweden and Norway it occupies much the same position as the Red Grouse does in our own country. A question was raised in the "Zoologist," in 1858, as to the specific identity of the two birds, by Mr. Norman, of Hull, and an interesting discussion ensued, which, however, appeared to go against such a supposition. In the present day it is more difficult than ever to define the character of species. Grant says that "species mongers" have been destroyed for ever by the all-powerful wand of Mr. Darwin. I for one, however, refuse to submit to a dogma of this kind, and will take the liberty of considering the *Tetrao saliceti* as a species perfectly distinct from that of *T. scoticus*. Its affinities are more with the Ptarmigan than with the Red Grouse, but it is distinct from both. The late Mr. H. Doubleday endorses my opinion. See some excellent remarks by that gentleman in the "Zoologist," for May, 1875.

Much as I was indebted to Mr Wheelwright for his notes about the Hazel Grouse, I am still more obliged to him for the very valuable account with which he has favoured me of the present bird. Living as he does in their own country, Mr. W.'s experience is valuable, and his well-known contributions to natural history entitle his remarks to our respect. Like the last contribution the present one is filled up where deficient from Nilsson.

"The Willow Grouse is found in Scandinavia, from the very north of Finmark down to about 60° north latitude. They are met with in North Wermerland throughout the whole year, but never further south than Lake Fryken, unless indeed they are driven down by snow, when an odd one may even occasionally be shot in Bohus Land and Upland. They are not met with near Christiana in the summer.

They never go up to the real fells or such rocks as rise above the limits of vegetation. When we go down from the fell tops we find the Dal Ripa first in that region which is clothed with willow bushes and fell birch, (*Betula nana*,) and especially in the lower tracts, where the birch (*Betula alba*,) first appears and forms low forests. Below this we rarely meet with them, and only when the young can fly.

In this above-mentioned sub-alpine region the Dal Ripa in summer is usually found in valleys, mostly by the side of the little becks or mountain streams which run among the bushes and thickets. You always find them in pairs or families with the male and female together. You not only find them, according to Nilsson, in the interior of the

country, but even on the coasts and islands. They crouch among the dwarf birch, willow, or heather, and rarely rise till you nearly tread on them. Sometimes, however, they rise very wild, and in the spring and autumn appear to be most shy. They almost always are on the ground, and very rarely perch in a tree; but although I have myself seen on more than one occasion the Willow Grouse, when frightened, perch in the birch trees, it is so rare an occurrence that many deny it. Their flight to me appears exactly to resemble that of the Red Grouse, and as they fly they utter a loud cackle which much resembles ‘errackackakkah.’ They do not generally fly far, and when they settle they usually utter the note of ‘kawau, kawau.’ The female generally rises silently, or with a faint ‘hjan, hjan.’ As soon as the young birds are hatched you see the families together; and in the breeding season the male is never far from the nest where the old female is sitting. As winter comes on they pack, and deep snow and hard frost sometimes drive them down into the regions that lie below the fells.

They pair about the end of May, but sometimes as early as April. At about one in the morning the male commences his love song with a loud ‘prrr-pack-prrr,’ and a deeper ‘kawau, kawau.’ The female answers with a finer ‘hjan, hjan,’ and the two draw together, and the male is very easily shot now by the poacher, who is hidden behind a rock or bush, and decoys him within shot by an imitation of the call-note of the female. The bird comes on by short flights, and runs within shot, sometimes stands still, raises up his tail spread out like a fan, flaps his wings against his legs, throws his neck back, and answers with his hoarse ‘kawau, kawau.’

The female lays ten or twelve eggs, without any nest, in the heather, but generally under a bush, or by the stump of an old fir. The male keeps watch while she is sitting to drive away any birds of prey that may approach the spot, and so bold is he at this time that he has even been seen to drive away a fox. After they are hatched, both the old ones attend the covey. When the young ones are frightened up they scream out much like young chickens, and separate themselves among the bushes or heather, and then sit so close that they can be easily picked up by the hand.

In the summer the food of the Dal Ripa consists principally of the blades or leaves of several plants, such as *Salix herbacea*, *Vaccinium myrtillus* (the blaeberry), and the young leaves or sprouts of several species of willow, and especially the seed of the *Polygonum viviparum*, which on this account is in Norway called Ripa Grass. In autumn they principally live on berries, and in the winter on

birch knots, and the stalks of the blaeberry bushes. In spring their chief food consists of birch knots.

Although no doubt Willow Grouse would afford as good sport to the shooter as the Red Grouse, scarcely any one ever shoots them here in a fair manner, and they are principally taken in snares in the winter, and sent down frozen to the different towns for sale; and some idea of this traffic may be formed by the fact that a single dealer in one of the northern provinces, according to Nilsson, during one winter when the birds were plentiful, sent off about fifty thousand Dal Ripa.

Beak black, short, thick, and convex; upper mandible tolerably blunt, and a little longer than the lower, (but out of a great many which I have examined scarcely two are alike.) Iris dark brown; eyelids covered with down, the edges brown. Over the eye in the male a large half-round vermillion spot covered with small warts, and fringed upwards with a red comb, three or four millemetres high, dentated at the edges. This spot and comb is smaller and paler in the female, and in both sexes is most apparent in the breeding season. The claws vary in form and colour at different seasons; in winter they are long, of an even breadth, tolerably straight, thin, concave beneath, white, and only brown at the roots. In summer they are shorter, oblong, oval, and flat (not concave) underneath. They are shed in July or August.

The old male in summer dress.—Head, neck, breast, and sides, red brown, sometimes chesnut, with black spots, especially on the top of the head and back of the neck, sometimes even with black transverse streaks or wavy lines on the breast; under chin for the most part black, with a white spot on each side. The eyelid white, and sometimes a white spot over the nostrils. Back, shoulders, over rump, upper tail coverts, and the innermost wing feathers, as well as the middle coverts, black, transversely speckled with rusty yellow or red brown lines. The smaller wing coverts, most of the wing feathers, belly, thighs, and legs, white; the six first primaries with brown shafts. Tail feathers—the fourteen black, with white feathers on the tips, which are broadest on the middle ones; the two feathers which lie over them and their coverts speckled with black and red brown. The under tail coverts red brown, speckled with black, and marked with a streak in front of the white edge at the end; tarsi in front and toes on the inner half covered with dirty white hair-like feathers; tarsi behind and the front part of the toes naked.

Female in summer.—Head, neck, breast, and sides, rusty yellow, with black spots or transverse streaks; these are especially thick on

the upper parts, so that the head above and sometimes the back of the neck appears black, with rusty yellow spots. Back, shoulders, upper tail coverts, and the two or four middle tail feathers, black, and speckled with rusty yellow or pale yellow transverse streaks; belly, wings, tail, and legs as in the male; under tail coverts pure white.

The male in summer dress differs from the female on account of its rather larger body and black chin, which in the female is rusty yellow; red brown colour on the neck and breast, where the female has only rusty yellow and black, and by the altogether different under tail coverts. Sometimes the red brown in the male is so dark as to appear nearly chesnut, or black brown in very old males, but in the younger birds the colour is lighter yellowish red brown, like the female, so that the head and neck above are black, with small red brown spots. Throat, sides of the head, front of the neck, and breast, yellowish brown, with small black, transverse streaks; but the female is always distinguished from the male through many or few red brown feathers on the throat and breast. It is according to Nilsson's experience that the males are more seldom met with in pure summer dress than the females. Both moult in July and August, when the speckled feathers are shed and others come in their places; and Liljeborg notices that this species even has an autumn dress with finer rusty yellow watering.

The young, just before the autumnal moult, from specimens taken from the 9th. to the 16th. of July, about six or seven inches long; beak brown; claws grey; the naked pale red spot over the eyes has already obtained its little denticulated comb; legs covered with dirty grey brown hair-like feathers down to the very claws. Head above brown red, with a black spot on the crown, and a brown streak along the back of the neck. The upper parts of the body speckled with red brown and black, with white spots on the shoulders; breast and sides rusty yellow, with black transverse bands. Wing feathers grey brown, the outer finely—the inner ones more thickly—speckled with rusty yellow. Tail with black and rusty yellow wavy transverse streaks.

By degrees the young become like the mother, as the brown wing feathers in August are changed for white, and the black tail feathers shoot out. The white wing feathers grow in this manner:—The outer ones of the first and second order come at one time; the third and fourth brown wing feathers are shed last in the young birds, generally after the middle of August. In this or the foregoing month the old birds shed their tail and wing feathers, and in the same or beginning of the next month the horny covering on the claws.

Male and female in winter dress.—Beak black; eye spot smaller and paler; the fourteen tail feathers black, with white edges on the ends, very broad on the middle ones. The shafts of the five or six first wing feathers brown. For the rest the whole of the plumage is snow white; tarsi and toes thickly covered with bushy feathers, like hair, which, similar to the foot of a hare, lie even on the sole of the foot.

The transition from summer to winter dress takes place at different times in different places and seasons, but generally in September and October. In the middle of the last-named month we see some white Ripa, and some speckled, on account of some of the summer feathers remaining. In the end of April or May the spring moult takes place, and even in the beginning of June we find occasionally winter feathers remaining. During the period of transition we see speckled birds with more or less white feathers among the speckled ones.

The spring moult comes on in this way:—The coloured feathers first appear on the head and neck, next on the back, last on the breast; and this tallies exactly with Hearne's observations in North America."

My figure of this bird is that of a female shot by Mr. Wheelwright from the nest in June, 1860. It is therefore in the real breeding plumage. The egg figured was taken out of her nest at the same time.

The bird has also been figured by Buffon, pl. enl. 129, (female in breeding plumage, f. 2 head of female taking on the breeding dress;) Bouteille, Ornith. du Dauph., pl. 42, f. 1; Naumann, Vogel. Deutsch., pl. 159; Temminck, Pig. et Gall., vol. iii., pl. 11, figs. 1, 2, 3; Frisch, pl. 110 et 111, (in winter plumage, and commencement of moult;) Gould, B. of E., pl. 256; Dresser, B. of E., in winter dress.



PIN-TAILED SAND GROUSE.

GALLINÆ.

Family TETRAONIDÆ. (Bonaparte.)
Genus PTEROCLES. (Temminck.)

Generic Characters.—Beak medium sized, compressed, slender in some species; upper mandible straight, but curved near the point; nostrils basal, half closed by a membrane, covered by the feathers of the forehead, open below. Feet with short toes, the under one hardly developed and articulated high up the tarsus; the three front toes united to the first articulation, and edged with a membrane; the front of the tarsi covered with small very short feathers, the rest naked. Claws very short, the hind one sharp edged, those in front obtuse. Tail conical; in some species the two middle feathers are elongated in a thread-like manner. Wings long, terminated in a point, the first primary the longest.

PIN-TAILED SAND GROUSE.

Pterocles alchata.

<i>Pterocles alchata,</i>	STEPHENS.
“ <i>setarius,</i>	TEMMINCK.
<i>Tetrao alchata,</i>	LINNÆUS.
“ <i>caudacutus,</i>	GMELIN.
“ <i>chata,</i>	PALLAS.
<i>Pteroculus alchata,</i>	GRAY; H. L., 2467.
<i>Ænas cata,</i>	VIEILLOT.
<i>Ganga cata,</i>	OF THE FRENCH.
<i>Chata-Flughuhn,</i>	OF THE GERMANS.
<i>La Grandule,</i>	SAVI.

Specific Characters.—Tail conical, and the two middle feathers prolonged to a thin point. A broad rufous band bordered with black, darker in the male, separates the chesnut-coloured throat from the pure white abdomen. Length, from tip of beak to the end of the long, thin, tail feathers thirteen

inches, the latter extending three inches beyond the shorter feathers of the tail. From carpus to the end of the long pointed wing eight inches and a half; beak eight lines; tarsi one inch and one fifth; middle toe and claw one inch.

THIS most elegant and beautiful of birds claims Spain and the Pyrenees as its principal European locality, for which reason it was named by Brisson *La Gelinote des Pyrenees*. It is also found in Sicily and the Levant, the plains of Crau in Provence, and accidentally in the northern parts of France. Its real home, however, is in the sandy plains of Africa and Asia, where it ranges from the three provinces of Algeria, through the Great Sahara, to Egypt, Syria, Persia, and thence to the burning sands of India, being common, as Dr. Leith Adams informs me, in Afghanistan.

Salvadori (*Fauna d' Italia*) writes:—"Temminck says this bird is common in Sicily and the Neapolitan States, but it has not been observed by Costa and others, and we may be quite certain it does not occur in the latter. Doderlein is inclined to believe that it does not occur in Sicily, but considering that several specimens are preserved in the almost exclusively local museums of Catania, Messina, and Syracuse, though not known exactly whence they came, the probabilities are in favour of their having been captured in Sicily, the more so as Doderlein tells us that Cupani gives a plate of it in his '*Panphiton siculune*.' According to Schembri various individuals were taken in Malta in 1843, but it does not appear, according to Wright, to have been captured there at any other time. Risso says it has been taken accidentally about Nice, where it is not difficult to believe that it may wander from the sterile lands of the Carmargue, in the neighbouring province. Verany confirms Risso's statement by stating that a specimen was captured near Nice in mid-winter.—(*Atti. Scieuz. Ital. Firenze*, 1841, p. 314.) It does not appear that this species has been found elsewhere in Italy."

Deputy Surgeon-General Stewart informs me that he has seen specimens of this bird which were shot in the desert east of Deesa, Bombay Presidency, from which locality were also brought in the same collection examples of *P. arenarius*, *P. exustus*, and *P. fasciatus*.

In Eastern Africa we are informed by Mr. Salvin, (*Ibis*, vol. i, p. 352,) that he only found this bird in the extensive sandy plains,—the Harakta. In the north of Africa, however, Canon Tristram (*Ibis*, vol. ii, p. 70,) says that it is far more abundant, and continues to occur in vast flocks in winter, in the M'zab and Touarick, where the next described species, *P. arenarius*, is not found.

The Pin-tail Sand Grouse occurs in sandy plains and uncultivated grounds, avoiding as much as possible the habitations of men. M. Crespon however tells us that he succeeded in taming it in confinement, and he had specimens in his aviary for several years, and even bred them. The male appeared very attentive to its mate, whose voice it readily responded to in syllables resembling ‘kaak, kaak, kaak, ka, ka, ka.’

In the desert, however, it is very wild. Canon Tristram says, “except during the breeding-season it is very difficult of approach; and when packed in winter it is vain to attempt to get a second shot, unless well mounted. Its flight is stronger and more vigorous than its congeners; and its sharp-pointed long wings give it all the appearance of a Plover. It is very garrulous when on the ground, and often betrays itself by its call-note, long before it can be distinguished by the eye from the surrounding sand.”

According to Eversmann its voice resembles that of Ravens and Crows. It makes no nest, but scrapes a hole in the sand, in which, Mr. Salvin tells us, it deposits only three eggs, which are laid in May, and the young are hatched in about the second week of June. Degland says it lays four or five, Temminck two or three eggs. The egg is described by Canon Tristram as perfectly elliptical in all the five species he possesses of the genus *Pterocles*. It is of a much richer fawn-colour than that of *P. arenarius*, “covered and sometimes zoned with large maroon-red blotches.”

Canon Tristram says that the Pin-tail Sand Grouse is very bad eating, the flesh, like that of its congener, being both poor and dry. Mr. E. C. Taylor, however, does battle upon this point, (*Ibis*, vol. ii., p. 199,) where he says that it all depends upon the cook, and that in Egypt he found the two species of Sand Grouse, *P. exustus* and *P. senegalensis*, “very good eating, the flesh of the thigh especially being peculiarly white and tender. However our Dragoman was an artist of no ordinary culinary skill.”

It is almost a pity, however to talk about anything so sensuous as a dinner off a bird so beautiful as the Pin-tailed Sand Grouse. Canon Tristram, whose experience as a practical ornithologist is very great, says, “I think, on close inspection, there is scarcely a bird in nature which surpasses the male *P. alchata* in richness of colouring or delicacy of pencilling”—a fact which I am sure my artist will verify with his usual skill.

The adult male has the head, nape, and back, a beautiful rich dead olive green, more or less shaded with darker, each feather being edged narrowly with black or blackish. The upper tail coverts rich

fawn, finely barred and pencilled transversely with black. The greater wing coverts lighter olive green, with a more decidedly marked black border, while the lesser wing coverts are of a rich maroon, distinctly bordered with white. Primaries grey, with black glossy shafts; secondaries grey, bordered with white; tertaries dark brown, with white inner webs, and also distinctly edged with white. Tail feathers grey, barred with dusky, and shaded with fawn-colour on the outer web, while the extremity of each feather for about half an inch is pure white; the long filiform middle tail feathers partaking of the olive green colours of the back, while below they share with this aspect of the tail feathers their rich dark brown. Side of the head and a band across the crop, upwards of an inch broad, rich dark fawn-colour, the latter being edged above and below by a line of black, which separates it above from the light olive greenish brown neck, and below from the pure white of the abdomen, flanks, and under tail coverts; shewing in a marked manner the sharply-defined colours in contrast, which gives to this bird a peculiarly beautiful appearance. The throat is black, sometimes, as in my specimen, which is in autumn plumage, mottled with white. The tarsi are thickly clothed with short white feathers, which, like the colours of the other parts, are sharply contrasted where they terminate with the horny brown of the toes; beak horny brown; claws black.

The female differs from the male considerably. The head, nape, back, and upper tail coverts, are clearly barred with black and fawn-colour, broader on the back, and narrower but more thickly on the tail coverts. The throat is white, the collar round the neck lighter and more mottled with brown, while the band across the crop between the two black lines is much broader, and lighter in colour. The side of the head is mottled like the back of the head and neck. The white tips to the tail feathers are smaller, and the finely-extended middle tail feathers rather shorter. In other respects like the male.

The young of the year resemble the female, but are smaller. The crop shaded with greyish and russet, with spots and brown zigzags.

My figures of the male and female of this bird are from specimens kindly sent me by Canon Tristram. The egg is from a specimen in my own collection: it was taken in Spain, and was sent to me by Moeschler.

It has also been figured by Brisson, *Ornithologia*, vol. i., pl. 19, male and female; Buffon, pl. enl. 505 male, and 506 female; Roux, *Ornith. Prov.*, pl. 247, adult male, pl. 248, fig. i. female adult, fig. ii. head of female of the year; pl. 249, fig. i. young just after leaving nest, and ii. male of year; Gould, pl. 258.



S A N D G R O U S E

GALLINÆ.

Family TETRAONIDÆ. (Bonaparte.)
Genus PTEROCLES. (Temminck.)

SAND GROUSE.

Pterocles arenarius.

<i>Pterocles arenarius,</i>	TEMMINCK. GRAY; H. ^{L.} , 9457.
<i>Tetrao arenarius,</i>	PALLAS.
<i>Perdix aragonica,</i>	LATHAM.
<i>Ænas arenarius,</i>	VIEILLOT.
<i>Ganga unibande,</i>	OF THE FRENCH.
<i>Ringel-flughuhn,</i>	OF THE GERMANS.
<i>Ganga,</i>	SAVI.

Specific Characters.—Only one band across the thorax; abdomen black. Tail wedge-shaped, and without any elongation of the middle feathers. Length of male thirteen inches; carpus to tip nine inches; beak eight lines; tarsus one inch and a quarter.

THE Sand Grouse inhabits the south of Europe, more especially Spain. It occurs also in Sicily, and occasionally in Italy and Germany; more rarely still in New Russia and the Caucasus. It is found only accidentally and as a straggler in Greece. Like the preceding species it is a bird of the desert, and is at home in the sandy plains of Northern Africa and Eastern Asia. In the Eastern Atlas Mr. Salvin tells us it occurs in the same localities as *P. alchata*, but is also found about Djendeli and Madracen, where that bird is not found. Canon Tristram says that though less abundant than *alchata* *P. arenarius* occurs universally throughout the Sahara, excepting in the extreme south, where it is replaced by *P. senegalus*. Dr. Leith Adams informs me that it occurs plentifully in Persia, Afghan-

istan, and Northern India, where it is known to English sportsmen either as Sand Grouse or Rock Pigeon. He further adds, "It frequents dry arid wastes, and is usually met with in flocks; although in request as a game bird its flesh is tough, and devoid of good flavour. The call is a rough guttural sound, resembling 'tuturuk' repeated."

The following interesting account of the Sand Grouse is taken from Canon Tristram's paper on the "Ornithology of Northern Africa," (*Ibis*, vol. ii, p. 69:—"There is much of the Plover character in the flight and manner of this tribe; and the first time I observed a covey on wing I took them for some large Plovers until within shot. The flocks of this species are generally smaller than those of its congener, though all the class appear to be more or less gregarious, even in the breeding season, several generally nesting close to each other. The *P. arenarius* is not so wary as *P. alchata*, perhaps from its upper plumage assimilating more closely to the sand in colour; but when alarmed it crouches to the ground, carefully concealing its dark breast, and does not take wing until approached very closely. Then it suddenly rises to a considerable height, and flies often to a great distance. These birds chiefly feed towards sunset, when their call-note, resembling that of a Partridge, may be heard incessantly until after dusk. As if to shew that in some respects they are a link between *Gallinæ* and *Columbidæ*, they never lay more than three eggs, this being the invariable number of the genus. These are of a character most unlike that of any other gallinaceous bird with which I am acquainted, being extremely elongated, compressed in the centre, and exactly the same size at each end—in fact perfectly elliptical. The eggs are placed two in a line, and the third lengthways outside them, in a depression in the sand without any nest. The bird in sitting, as I have observed, lies on one side spreading out one wing to cover the eggs, thus presenting a grotesque lop-sided appearance; but it is a posture for which the deep keel of her sternum admirably adapts her."

"The flesh of the Sand Grouse is extremely white, but very poor and dry without any flavour. We never discovered any mode of cooking by which it could be rendered tasty, or even palatable. I have seen both the common species thrive while in captivity, and almost domesticated in the courtyards of Arabs' houses."

The egg which I have figured is one taken by Canon Tristram, and kindly sent to me. It measures one inch and nine tenths long, and four inches and one tenth round the middle.

Colonel Irby, in a valuable paper in the "*Ibis*," vol. iii., p. 235, on the "Birds observed in Oudh and Kumaon," says that two or

three large flocks of *P. arenarius* were seen near Hurdue in January, 1860, and many killed. He quite confirms the statements of Dr. Leith Adams and Canon Tristram, about the uneatable character of the Sand Grouse. "Both species," says Colonel Irby, "of the Indian Sand Grouse which I have tasted are uneatable, and in this respect certainly tend to confirm what the natives say 'that they live upon sand.'"

Without of course falling in with the native statement above made, it is quite clear from Mr. Taylor's note, as quoted in the last notice, that difference of food has much to do (as well as the skilful Dragoman) in making the flesh of these birds eatable.

The adult male has the top and sides of the head and nape russet grey. The back and upper tail coverts have a mottled appearance, representing a series of spots of a sandy ochreous colour surrounded by a ring of black. If a separate feather is examined, it will be found that the extremity is ochreous, and the base paler, the two colours being separated by a dusky band. The wing coverts are the same, but are terminated with rich ochreous, which gives a broad band of that colour across the wing. The long strong pointed wing, which when closed extends beyond the tail, has the primaries dark grey with glossy black shafts, the third, fourth, fifth, and sixth slightly bordered at their distal ends with light russet. Secondaries unicolorous smoky grey, lightly bordered with white.

The throat and sides of the neck are occupied by a broad dark ochreous-coloured collar, faintly shewn at the nape, and bordered in front below with a broad black band; the neck and crop have a slight lavender tint, gradually going off into the mottled russet of the back; this is separated from the pink coloured feathers of the upper part of the abdomen by a narrow well-defined black band, edged with white, which goes right across the thorax; the middle and lower part of the abdomen and flanks are brown black with a tinge of sepia. Under tail coverts white; tail feathers, below and above, russet, bordered with black and tipped with white, except the two middle ones. Tarsi covered with smaller pink feathers in front, and with a kind of shagreen skin behind, which is continuous with that on the soles of the feet. The beak bluish horn-colour. Feet yellow.

The female differs from the male, in having the upper parts of a light fawn-colour, thickly pencilled with black in transverse striæ. Lighter and fewer bands on the wing coverts, which terminate with ochreous yellow, but much paler than in the male; throat and under wing coverts yellowish white, the breast in colour and markings like that of a hen Pheasant, and the black line, which is broader than in the male, is succeeded by a band of about half an inch wide of

yellowish white. The rest of the abdomen black. Under tail coverts whiter.

My figures, male and female, are from specimens kindly sent to me by Canon Tristram; they are marked Laghouat, November 1856, and therefore in winter plumage.

The bird has also been figured by Temminck and Laugier, pl. col. 354 and 360; Gould, Birds of Europe, pl. 257; and Naumann, pl. 153.

Of the beautiful and elegant Three-toed Sand Grouse, *Syrrhaptes paradoxus*, an excellent figure and description has been given in the "Ibis," vol. ii., p. 105, by Mr. Moore, the keeper of the Free, Public, and Derby Museum, Liverpool. This paper was read at the meeting of the British Association at Aberdeen, in 1859. It records the appearance of this bird for the first time in Great Britain. One specimen was shot in Wales, out of a flock of three, on July 9th., 1859. Another was captured in Norfolk about the same time, and is recorded by Mr. Currie, ("Ibis," vol. i., p. 472.) A third specimen was shot near Hebro, in Jutland, on the 23rd. of July, 1859; and a pair were observed in the Dunes near Leyden, one of which was shot, in September, 1859.

As there is a full account of the capture of this bird, and its history, with a plate by Wolf, executed in the first rate style of excellence for which the "Ibis" is justly celebrated, I do not feel called upon to include it in this work. If any bird has been seen in Europe for the first time, and not figured, it will still fall to my net, though observed in these isles. I regret not to have the opportunity of including in my work the beautiful *Syrrhaptes paradoxus*, so called from the entire absence of a spur or hind toe, and also remarkable for the aberrant character of the beak.

Since the first edition of this work was published, a remarkable invasion of Great Britain was made by this bird. This was in 1863, and a complete history of this irruption, and the localities of almost all the birds captured, somewhere about one hundred and fifty, is given by Professor Newton in the "Ibis" for 1854. I am able to add one more to the list, which would come in at No. 66*. This bird was killed at Pelden, and was kindly presented to me by Mr. Carter, of Little Wigborough, and with the three others shot in the county is now in my collection. According to Dr. Gustavus Radde, who has given a long account of this bird in his "Reisen in Suden von Ost Siberien," 1861, with plates of the bird and its egg, it is subject to sudden movements on a very large scale. We appear to have had such a movement in 1863.



FRANCOLIN.

GALLINÆ.

Family PERDICIDÆ. (Bonaparte.)
Genus PERDIX. (Brissom.)

Generic Characters.—Beak short, compressed, strong, naked at the base; superior mandible arched, convex, and much curved near the point. Nostrils basal, lateral, half closed by a membrane, arched, and naked. Feet with three toes in front and one behind, those in front united by a membrane up to the first articulation. Tail composed of fourteen to eighteen feathers, short, wedge-shaped, and turned towards the ground. Wings short, the three first primaries the shortest, the fourth and fifth the longest, the fifth generally the longest.

FRANCOLIN.

Perdix francolinus.

<i>Perdix francolinus,</i>	LATHAM. TEMMINCK. VIEILLOT.
“ “ “	CUVIER. LESSON. SCHINZ.
“ “ “	SCHLEGEL.
<i>Francolinus,</i>	BRISSON.
<i>Tetrao francolinus,</i>	LINNÆUS.
<i>Francolinus vulgaris,</i>	STEPHENS. BONAPARTE.
<i>Chætopus francolinus,</i>	SWAINSON.
<i>Attagen francolinus,</i>	KEYSERLING ET BLASIUS.
<i>Francolin à collier roux,</i>	OF THE FRENCH.
<i>Gemeines Spornfeldhahn,</i>	OF THE GERMANS.
<i>Francolino,</i>	OF THE ITALIANS.

Specific Characters.—Upper tail coverts and tail beautifully marked with black and white, (male,) or with broader bands of grey and white, (female.) A red collar round the neck of the male, bordered on the back below with another band of black feathers and round white spots. Under tail coverts in both sexes dark red. Length of male thirteen inches; wing from carpus six inches; tarsus two inches; middle toe and claw one inch and three quarters; beak one inch and three tenths. Female eleven inches and a half long.

THE Francolin was once common in the south of Europe, especially in Sicily and Cyprus. From thence it ranges through the whole of Asia, and the vast prairies and marshes of the north of Africa. The Francolin is, however, becoming a rare bird in Europe. Savi tells us that in the sixteenth century they were common, as game birds, in Tuscany, and that special laws were enacted by the Tuscan princes for their preservation. Now, however, they are only recorded very rarely there; Savi himself has never met with a specimen, although he has known sportsmen who have killed them in their youth.

In the "Ibis" for 1862, p. 352, there is a long and interesting letter from Lord Lilford, stating his belief that the Francolin is no longer found in Europe, except the doubtful European island of Cyprus. In reference to this correspondence, I now publish the opinions of Messrs. Salvadori and Doderlein, which show, I think, that Lord Lilford was mistaken, and that up to 1870, at least, this bird existed in Sicily.

Salvadori (*Fauna d'Italia*) writes:—"The Francolin is at present nearly extinct in Italy. Not many years ago it was sufficiently common in the southern plains of Sicily, and particularly in the neighbourhood of Castelvetrano, Partanna, Sciacca, Licata, Terranova, Caltagirone, Misilmeri, S. Giuseppe di Mortelli, and in similar localities of Madonie. Besides, according to Doderlein, King Ferdinand of Naples in 1800 introduced it, and it became rather numerous in the demesnes of the royal villa, La Favorita, on the borders of the Monte Pellegrino, near Palermo. But being persecuted by immoderate shooting, so as to even kill the females when sitting on their eggs, the numbers diminished gradually, and at last only a few remained in a restricted circle between Licata, Terranova, Butera, and Caltagirone." It is to be feared that there are now [Salvadori wrote in 1872] none living there, since Doderlein, from whom these notices are taken, having purposely visited Terranova in 1870, could not find one individual, and from his researches the results are that at the end of 1865 some individuals were killed at Christmas near Suero and Buterra, by people who were invited by the Prince Monteleone, the proprietor of these grounds. Afterwards some others were killed on the property of Falconara, near Terranova, and perhaps the last surviving one in the autumn of 1869. I think it is not yet possible to be quite certain of its extinction in Sicily, as the date of the last capture is too recent, and it therefore appears to me that those who have proclaimed its extinction in Sicily have been too hasty.

"The Francolin was also formerly found in the hunting grounds

of the Princes of Tuscany; and Savi, in 1829, wrote that he had spoken with old hunters worthy of faith, who had assured him they had killed Francolini in the neighbourhood of the park of Artimino a little before they were entirely destroyed. It does not, however, appear that the Francolin, according to the 'Storia degli Uccelli,' vol. iii., p. 14, was indigenous, but had been imported. The name of Francolin proclaims the freedom of its life. Protected by vigorous game laws, it is not improbable that it was imported into Tuscany from Sicily. Doderlein says that the Dukes of Tuscany brought several couple from Sicily, to acclimatize them in the hunting grounds of Etruria. I do not know where Doderlein has got this information. He attributes it, but erroneously, to Savi. Temminck says at first that the Francolin was found in Naples, Sardinia, and Malta; but later, in vol. iii. of the 'Manual,' p. 332, he corrects his first assertion, saying expressly that it is not found either in Sardinia or the Neapolitan States. In fact it has not been found in Sardinia, either by Cetti, Cesa, Lord Lilford, or myself. According to Lord Lilford, it was imported from Sicily into the Neapolitan territories, but not into the royal preserves, where it has been since entirely destroyed. Finally, it is not found in Malta; neither Schembri nor Wright mention it, and as Lord Lilford observes, it is not probable that it has ever existed there on account of the local conditions not being favourable. Benoit says that in the southern parts of Sicily, and probably in the plains which extend between Caltagirone and Terranova, this bird exists, but in consequence of excessive hunting at all times it becomes more rare from day to day."

Doderlein says of this bird:—"If the *Tetraonidæ* are indigenous in the Alpine and German woods, the Francolin represents them in the southern plains of Sicily. This very beautiful bird, years back, lived in great abundance in the orchards and marshy plains of Sicily, and particularly in the neighbourhood of Castelvetrano, of Partanna, of Sciacca, of Licata, of Terranova, of Caltagirone, of Miselmeri, of St. Giuseppe di Mortelli, and in similar localities; more than anywhere else in the Villa Favorita, on the sides of Monte Pellegrino, introduced there in 1800 by King Ferdinand, who was passionately fond of the chase. Such was the quantity in the island that the Dukes of Tuscany took away several couples, to acclimatize them in the private hunting grounds of Etruria. They were, however, so much persecuted on account of the excellency of their flesh and their easy capture, that, owing to the abuse of shooters, who did not even spare the female, they became almost entirely destroyed. And so it was that in ten or twelve years from that time they were

confined to a restricted zone between Licata, Terranova, Butara, and Caltagirone, from which a few individuals strayed as far as Partanna. And so from year to year they became fewer and fewer. Some years, in fact, I could not provide a single example for the ornithological collection of the museum of Palermo, and it was only in 1865 that I obtained from Count Terero an old skin killed on his grounds. More recently another pair of skins came from my correspondent Girgenti, obtained a few years back from the neighbourhood of Terranova. Three years ago, Mr. Howard Saunders, a distinguished English ornithologist, when he returned to England, believed himself authorised to declare in an article inserted in the '*Ibis*', that the race of Francolin was extinct in the island. In contradiction to such an assertion, other ornithologists, among whom were Salvadori and myself, sustained the opinion that though nearly extinct, some individuals still lived in Terranova. The species only appearing at the time of breeding, some specimens might in all probability escape the persecution of the gun. As the question put in these terms might be verified, I decided to place myself at Terranova, as much to study the zoological conditions of this magnificent region as to resolve the question of the Francolin. I must confess that I did not kill the bird with my own hands, but from all the information I obtained I arrived at this conclusion. First, that up to 1865 some specimens were taken annually between Suaro and Butera, which were stuffed with odoriferous herbs, and sent to the Christmas feast of the Prince Monteleone o Pignatelli, who was the proprietor of this fertile country. Secondly, later the species were reduced to a very rare individual which was killed from time to time in the Falconara, near Terranova, which property was recently acquired by the Baron Bordonaro, where, in the autumn of 1869, perhaps, in fact the last individual was taken, and eaten at a dinner in Terranova. This fact was attested to me by the Prefect, and many hunters in the country. It was also announced to me by Professor Tacchani, who had placed himself there to notice the eclipse of 1870. Thirdly, that owing to the extreme rarity of this bird, the Captain of the Garde Champêtre of Terranova, Don Diego Nuvarra, took the trouble to send me at Palermo during the current year one or two individuals of the desired species."

"It results therefore from all this that the Francolin, though very rare, still existed up to the autumn of 1869 in some of the southern parts of the island, and that even now they are not exterminated, unless within an infinitely short period.

"As to the habits of this bird, I do not know how to indicate

them better than by transcribing a letter written by M. Benoit about 1840 in his clever ornithological work upon Sicily—a work which has unfortunately become very rare. ‘The Francolin,’ he says, ‘lives in the humid parts of plains, or in the proximity to rivers, and among reeds. They only occur in couples in breeding time. Except at that epoch they are separated far from each other, living singly.’ Though divers authors assert that they perch on trees, Benoit denies it, and says he has always seen them on the ground, and even when persecuted they do not perch on trees—a fact affirmed to me by all the hunters of these countries. It has an extensive flight, but being a heavy body, it follows that it may easily be taken by perseverance. Nevertheless it is naturally wild, and difficult to domesticate. The note which the male bird utters in the breeding season, either at break of day or in the evening, resembles ‘tre, tre-tre-tre,’ with a tone sufficiently changing. From this song the poor people say it puts its own price on its head of three Sicilian ‘tari.’

“The Francolin makes its nest under birches and other bushes, scooping out the ground a little, and filling it with dry leaves, hay, and straw. The female lays from ten to fourteen eggs, about the size of the Common Partridge, of a white colour, with obscure spots.* The young at the end of October have already acquired the beautiful plumage of the old bird; the breast is less sprinkled with white spots.

“It is needless to add that this bird does not even exist in Sardinia.”
—Benoit, ‘Orn. Sic.,’ p. 118.

The Francolin lives, like other Partridges, in coveys, and remains constant to the locality where it is bred. It loves humid woods and marshy grounds, and, according to Savi and other writers, it perches on trees during the night. M. Malherbe, however, denies that the Francolin perches. He says it lives solitarily in Sicily, in moist plains near a brook, or in the middle of a bed of rushes; that it keeps much on the ground, but will fly a good distance when hunted, and its capture requires skill and perseverance. The natural timidity of the bird makes it difficult to tame in confinement.

In India the Francolin or Black Partridge is very common. Colonel Irby (“Ibis,” vol. iii., p. 236,) says:—“This handsome Partridge is found in great numbers in all grass jungles near water, and is particularly numerous on the banks of the Gogra, Choka, and other large rivers. Good sport is to be had with them in November, in the *hulde* or turmeric fields. This Partridge was common in Kumaon in April, May, and June. Its call was to be heard wherever there was any

* But see next page.

cultivation." He further adds, when describing the Grey Partridge, (*Perdix ponticeriana*,) that its flesh is dry, and scarcely eatable, being a degree worse than that of the Black Partridge, or Francolin.

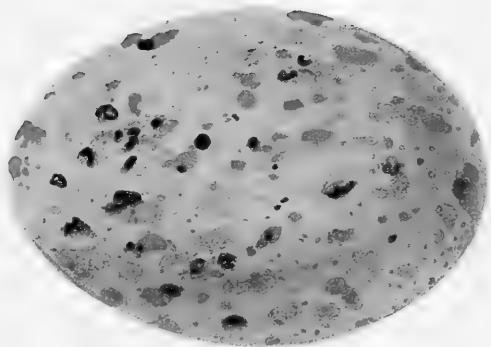
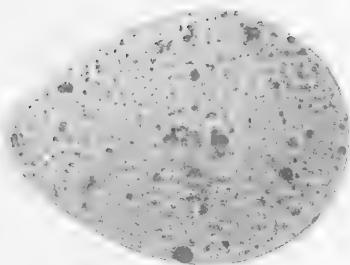
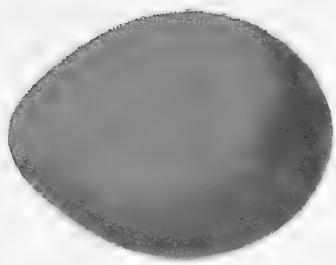
M. Malherbe, however, says that in Sicily it is "un gibier exquis," and that it is so much sought after at all seasons, that it is becoming more and more rare. Colonel Irby says that in India the Francolin will take refuge in trees when flushed, but rarely.

The Francolin nests on the ground underneath some bush, where it scrapes a hollow, which it fills with dried leaves and stalks, and in this nest it deposits from ten to fourteen eggs, which are of a pale grey yellow or white, and either uncolorous or having large brownish, almost invisible spots marked upon them.

From a paper on the nidification of European birds in "Nau-mannia," for 1853, p. 419, by Baldamus, I translate the following about the egg of the Francolin:—"Two eggs in my collection and many others in the Paris collections, from Cyprus, differ materially from that figured by Thienemann, pl. 7, fig. 8. This figure has the length, and almost the breadth of one figured as *Perdix saxatalis*. Figs. 5, *a*, *b*, which Thienemann figures of the Francolin's egg, is forty millemetres long, and twenty-nine millemetres broad, (*saxatalis* being forty by thirty.) This in my opinion is too large. My specimens are much more nearly the size of those of *P. cinerea*. In the grain of the shell they also resemble the egg of *P. petrosa*. They have a somewhat granular surface and an isabelle white ground colour, and no spots."

The following are the measurments given by Baldamus of the five European Partridges, and the dimensions of their eggs:—*Perdix graeca*, (*saxatalis*).—Length of bird from thirty-two to thirty-five centimetres; egg, greater diameter from forty-three to forty-five millemetres, lesser from twenty-two to twenty-three millemetres. *P. petrosa*, (Barbary in British lists.)—Bird, thirty-one to thirty-two centimetres; egg, greater diameter thirty-nine to forty-one millemetres, lesser twenty-nine to thirty-one millemetres. *P. rubra*, (Red-leg.)—Bird, thirty to thirty-one centimetres; egg, greater diameter forty to forty-one millemetres, lesser thirty to thirty millemetres and a half. *P. cinerea*, (Grey Partridge).—Bird, thirty centimetres; egg, greater diameter thirty-three to thirty-five millemetres, lesser twenty-five to twenty-six millemetres. *P. francolinus*.—Bird, thirty centimetres; egg, greater diameter thirty-three to thirty-four millemetres, lesser twenty-five to twenty-six millemetres.*

* Ten millemetres are one centimetre, and to bring centimetres into English inches, multiply by two and divide by five.



1. FRANCOLIN.

2. GREEK PARTRIDGE.

3. RUFFED BUSTARD.

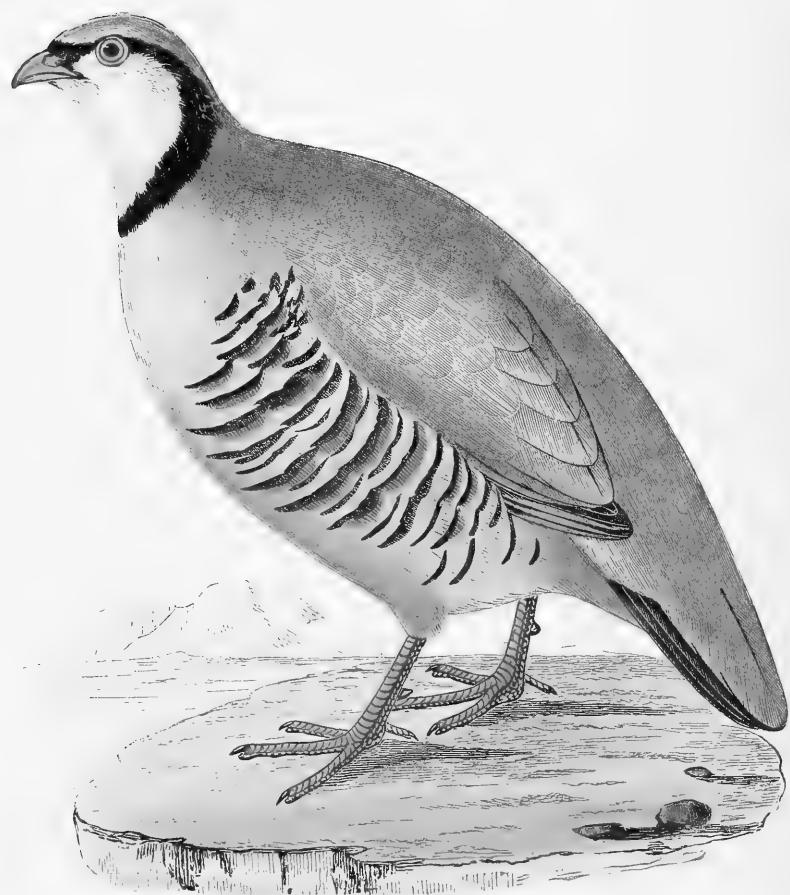
The male has the top of the head and nape a light rufous, with longitudinal stripes of black; forehead and sides of the head, with the exception of a large oval patch of white extending from the eyes backwards, black. The dark rufous collar of the neck having some of its feathers tipped with an oval black spot with white edges, and a broader band of black feathers marked conspicuously with pure white round spots, occupy the upper part of the back; below these bands the scapularies are well marked out with dark brown feathers, broadly edged with light rufous; the rest of the back, upper tail coverts, and tail feathers, most delicately pencilled with transverse zigzag lines of black and white. The upper wing coverts are marked out like the scapularies, while the long tertials are richly marked with light rufous transverse bands, on a black brown ground, the rufous more distinct on the outer webs. The primaries and secondaries rich rufous, with transverse bands or spots of dusky brown, more or less distinct. The throat and breast are pitchy black, separated by the rich dark rufous collar round the neck; the sides of the chest and all the lower part of the abdomen black, with oval white spots, which become larger on the flanks and shaded with rufous; bottom of abdomen light red, edged with white, while the rich rufous of the neck is repeated on the feathers of the under tail coverts, which are also fringed with white. The feathers on the thighs are barred with black and white, mingled with pencillings of rufous. Tail below dark brown, with their basal halves barred with white. Beak black; legs and feet orange red; tarsi armed with a spur.

The female is a much plainer-marked bird. The forehead, and a faint trace on the back of the neck, red; top of the head hair brown, with darker longitudinal shades; scapularies and wing coverts dark brown, with light brown edges; the rest of the back and upper tail coverts "partridge grey," beautifully marked and pencilled with darker transverse bands of brown and white. Primaries black brown, with russet spots and transverse bands; the secondaries marked in the same way, but the colours lighter, and the bands broader. The throat creamy white, going off into yellow on the neck; sides of the head rufous, finely spotted with black about the ear coverts; chest and abdomen cream white, with triangular bars of black, and more or less tinged with rufous on the sides and flanks; lower part of abdomen dirty white; under tail coverts dark rich russet, with slight bars of black and yellow, and covered on their basal aspect on each side by two or three feathers of a yellowish white, barred with black; tail feathers dark brown, lightly barred with wavy bands of white.

The young after the first moult resemble the adult. The males have the spur rudimentary.

My drawings of these birds, male and female, are from specimens procured by Canon Tristram, in Cyprus. The egg is from a specimen in my own collection. It was taken in Cyprus, and sent to me by Herr Moeschler.

The bird has been figured by Brisson, pl. 27, fig. 2, (although this generally accurate observer has omitted to give the spur on the tarsus of his figure, which is a male); Buffon, pl. enl. 147, (male and female); and Gould, Birds of Europe, pl. 259.



GALLINÆ.

Family PERDICIDÆ. (Bonaparte.)
Genus CACCABIS. (Kaup.)

Generic Characters.—Bill somewhat lengthened, stout, red; tarsi of male with a blunt spur, red; tail of twelve to fourteen feathers, not quite concealed by the upper tail coverts; a small nude patch behind the eye; plumage not mottled.

GREEK PARTRIDGE.

Caccabis græca.

<i>Caccabis græca,</i>	BONAPARTE. GRAY; H. List, No. 9803.
<i>Perdix græca,</i>	GESNER; Icones Avium, p. 64, 1553.
“ “	BRISSON, 1760. BREE; first edition.
“ <i>rufa,</i>	LINNÆUS. VIEILLOT.
“ <i>saxatilis,</i>	MEYER ET WOLFF.
<i>Bartavelle Grecque,</i>	OF THE FRENCH.
<i>Stein-rothehahn, Rot-hahn,</i>	OF THE GERMANS.
or <i>Weltsch-Raeb-hahn,</i>	
<i>Coturnice,</i>	OF THE ITALIANS.

Specific Characters.—Throat and upper part of the fore-neck white or cream-coloured, which is separated from the unicolorous dove-coloured cross by a black band, broader at the sides, which extends from each eye. The central tail feathers extend for three quarters of an inch beyond the under tail coverts. Length thirteen inches and a half to fifteen inches; wing from carpus six inches and a half; tarsus two inches, middle toe and claw rather longer; beak three quarters of an inch.

THE bird which I have now to notice has been well known for three hundred years as *Perdix græca*, or the Greek Partridge. It is closely allied to the Red-leg, or French Partridge, but is at once

distinguished by its larger size, and by the absence of the mottled plumage below the black mark in the neck. The older ornithologists—Gesner, Willughby, and Belloni—acknowledged this affinity by designating *Perdix græca* as *Perdix major* or *Rufa major*; while Ray, Linnæus, and Albin all referred it to *Perdix rufa*, the latter even figuring the Red-legged Partridge for this bird. In the present day we do not find ornithologists confounding the two birds, as they are universally considered specifically distinct. There are, however, other varieties or races which are thought by modern naturalists as probably distinct also. Canon Tristram has sent me two skins, one from the Morea, a male, which may be considered typical; and another, a female, a smaller bird with a rufous throat, which was obtained from Crete. But I cannot, after careful examination, find anything which age, or sex, or difference of food might not account for. Canon Tristram says he thinks they represent two distinct species, one inhabiting the hills, the other the plains.

Doderlein (op. cit.) says of this bird, "The Greek Partridge arrives accidentally, rarely in the Modenese Apennines. In October, 1852, after a violent storm, an abandoned bird was picked up near Rotetlia, which I was able to acquire and to place in the Museum of the University, under the name of *Perdix saxatilis*. Some years later two other specimens, either of this bird or *P. rubra*, were killed in the neighbourhood of Saltino, in the Valley of Secchia, one of which was given to me and the other was eaten. More recently Tonguoli had another, taken upon the hills in the snowy winter of 1870. This species is therefore very rare and accidental in Modena, and only appears after extraordinary atmospherical commotion, coming probably from Liguria, where it is indigenous. On the contrary, this Partridge is very common in Sicily, especially on the steep mountains of Madonie, Petralia, Corleone, Caltagirone, Alcamo, Carini, S. Vito, and Briolo, and all the chains of Iblei, as also in certain valleys and interior plains of the island. In spite of the immense consumption which takes place in all times and seasons it multiplies and propagates quickly, and in certain localities it is so common as to be sold at a very low price. (Benoit.) In some districts the peasants are said to take the eggs from the nests for domestic purposes. A white variety, with eyes, beak, and feet rosy like this bird, lives among the mountains. According to Salvadori it is probable this bird occurs in Sardinia."

Salvadori (Fauna d' Italia) writes:—" *Perdix saxatilis* differs from the true *P. græca* (Briss.) *chukar*, (Gould,) principally by two characters. In the latter the throat is white with a fulvous tint, especially on the lower part. In the former the throat is entirely



P. GREGORY, V.A.R.

white. Besides in *P. græca* the small feathers which cover the nares are white and not black; whilst the black on the forehead is not joined by a black band to the base of the lower mandible. *P. græca* is common in a great part of Istria, and in the middle of Europe eastwards. *P. saxatilis* is found in all the mountainous parts of Italy—on the Alps, on the Apennines, and on the mountains of Sicily. It is not found in Sardinia nor Malta. Savi doubts if it occurs in Tuscany, but it is quite certain that it is found there, though rarely. (Benvenuti, *Ibis*, 1864, p. 228.) It is also found rarely in Modena.

According to Professor Doderlein:—" *P. saxatilis* prefers to live in places of difficult access among sharp rocks. I have found it in the mountains of Ascalano, in Central Italy, where they live in the same localities with the Red-leg (*P. rubra*). They nest under bushes, and also among the rocks. The eggs, from twelve to sixteen in number, are yellowish or reddish, with brown or fulvous spots and points. It appears that in some parts of Sicily there exists an albino race of this Partridge, which has been mentioned by Doderlein and other authors, but it does not appear that the albino form is always complete; some individuals being met with in which the white runs into ash-colour, and others which are spotted or shaded with white and ash-colour. Though I have said this bird is not found in Sardinia, I ought to add that I have been told of a Partridge larger than *Petrosa*, which is now and then met with near the northern part of that island. As I am assured that it is found in the neighbouring island Corsica, it is not difficult for me to believe that it may occur in the north of Sardinia."

Dr. Leith Adams writes me word he is quite confident that the *Perdix chukar* (Gray) of India is identical with this bird. I will give an abstract of his letter:—"These two are identical. *P. chukar* frequents the Himalayas from Nepaul to the mountains of Persia in the west. I have seen and examined specimens from all these countries including Afghanistan and Chinese Tartary. *P. græca* is common on the hills and mountains of south-eastern Europe. It is a common bird during the winter months in the markets of Constantinople, where I procured several specimens, which I have carefully compared with Himalayan specimens of *P. chukar*, and I cannot observe any difference. Mr. Blyth, (T. A. S., xviii, p. 53,) states that '*P. græca* only differs from *P. chukar* of the Himalayas, Afghanistan, &c., in having a *purely white throat*, and in the ferruginous of the ear coverts being *less marked*.' According to my experience (having examined many skins) these points, although pretty general, are not universal in the birds killed in Turkey. I

have seen several exactly similar in all respects with *P. chukar*."

According to this opinion the smaller of the two birds sent me by Canon Tristram from Crete, is equal to the *P. chukar* of Gray; and it follows, I think, if this is so, that *P. græca* and *P. chukar* are one and the same species, for surely we cannot maintain for a moment that the difference of colour in the throat is sufficient to constitute specific difference. Canon Tristram, however, does not consider that his smaller specimen is sufficiently deep rufous, for he remarks,—“I never saw the white throat from India, or the rufous one from Western Europe. Turkey and Syria are debatable ground held by both varieties.”

I have not been able to get a Swiss skin for comparison. As Canon Tristram observes, however, the question is one of “race,” or of eastern and western varieties of the same species. M. Bouteille, as quoted by M. Degland, has succeeded in obtaining a hybrid between *P. græca* and *P. rubra*, the males being more like the former, the females more like the latter. Both had the black collar of the Greek Partridge and the black spots which follow it in the French Partridge, but smaller and less numerous. The feathers on the flanks of the male were more like those of *græca*, in the female more like *rubra*.

The Greek Partridge is found, as its name implies, in Greece and the islands of the Archipelago, in Italy, Sicily, Switzerland, and Turkey. Thence it spreads into Syria, being replaced in Persia and India by the form known as *P. chukar*. It is found in some parts of Germany and France, and among the mountains of the Jura, the Alps, and the Pyrenees. Specimens from Japan are, according to Temminck, exactly like those found in Europe. Lord Lilford, (“*Ibis*,” vol. ii, p. 238,) says it is the Common Partridge of the Epirus and the Ionian Islands, but is not very abundant in Corfu, where it is only met with on the ridge of San Salvador. He further remarks:—“The Greek Partridge haunts the stony hill sides, never, as far as my own observation goes, descending to the plain. It is not easy to make a good bag of these birds, even in localities where they are numerous, as the coveys disperse on being disturbed, and on alighting each bird takes a line of its own, and sets off running to the nearest covert, which, in these parts generally consists of thick evergreen shrubs, from which it is very difficult to flush them. In the Ionian Islands they are most abundant in Cephalonia, Santa Maura, Kalumo, Petula, Arkudi, and Meganisi. The flesh of this species is, to my taste, far superior to that of either of its congeners, *P. rubra* or *P. petrosa*.”

The habit above mentioned by Lord Lilford, of frequenting stony and rocky places, is doubtless the reason why Meyer thought it right to alter the name of this bird, from that which it had possessed for centuries, to that of *Perdix saxatilis*, a most uncalled-for and unjustifiable innovation.

Modern systematists have separated this bird, with the "Red-legged Partridge" and others from *Perdix*, and placed them in the genus *Caccabis*, instituted for them by Kaup in 1829. Gray, in his "Hand List," places no less than four sub-families, including the Quails and one hundred and fifteen species, between the Grey Partridge and the well-known "Frenchman" of our manors. Its affinities are certainly more with the *Tetrao-gallinæ* than with the *Perdicidæ*, and I have therefore adopted Kaup's generic name.

The Greek Partridge scrapes a hole near a rock or stone, which it fills with stalks and leaves, and in this it lays from ten to twenty eggs, which are somewhat larger than those of *P. rubra*. The shell is hard and shining, and is either unspotted pale yellow, or brownish yellow with violet brown dots and spots, according to Bädeker. The shape of the egg is oval. Nidification commences in May, and the female sits twenty-three days.

The adult male has all the upper plumage dove-coloured grey, with a beautiful shade of purplish glossy pink on the scapularies and sides of the chest. The primaries are of a rich brown, with a light brown patch near the end of the quill on the third to the ninth inclusive, gradually getting smaller; the second, third, fourth, and fifth primaries are about equal, and the longest in the wing. Head, throat, and chest have been described in the specific diagnosis. Centre of the abdomen presents a conical surface of rich fawn-colour, flanked above on each side by beautifully-marked feathers of a pure dove-coloured grey, with a bar of light fawn-colour between two other transverse bars of rich umber brown, at the end of each feather: these latter markings being broader on the sides of the abdomen, and narrower on the flanks proper. Under tail coverts russet; tail feathers rich dark russet. The margin of the eyes, iris, and beak, a beautiful red; legs and feet same colour, but paler; bottom of the feet dirty yellow; the tarsus of the male is furnished with a well-developed, but obtuse spur, situated about the middle.

The female resembles the male, but is smaller and without spurs; the grey is less lively; there is less white on the throat; and the black band and the markings on the flanks are smaller.

The young after the first moult are more grey, and less shaded with pink above, and are pencilled and spotted irregularly with brown and whitish.

In some varieties the white is less pure, or even fawn-coloured.

My figures of this bird are from specimens kindly sent me by Canon Tristram. The male bird with white throat, the typical *P. græca*, is from the Morea. The female bird with the rufous throat, which I have figured for comparison, is from Crete. It is the bird before alluded to. The egg is figured from one in my own collection.

The bird has also been figured by Brisson, Ornith., pl. 23, f. 1; Buffon, pl. enl. 231; Roux, Ornith. Prov., pl. 259; Naumann, pl. 164; Bouteille, Ornith. du Dauph., pl. 42, fig. 2; Gould, B. of E.; Temminck, Atlas du Manuel; Vieillot, Faun. Franc., pl. 109; Bonaparte, Fauna Ital.

ORDER XI.—ALECTORIDES.

Family GLAREOLIDÆ. (Bonaparte.)
Genus *GLAREOLA.*

Generic Characters.—Beak short, convex, compressed towards the point; the upper mandible curved the distal half of its length, without being notched. Nostrils basal, lateral, and obliquely pierced. Legs bare for a short space above the knee; tarsi long and rather slender; three toes in front and one behind, the middle one being united to the exterior by a short membrane; the interior toe free, the posterior toe articulated upon the tarsus. Wings very long, the first primary much longer than the others. Tail forked.

BLACK-WINGED PRATINCOLE.

Glareola melanoptera.

<i>Glareola pratincola,</i>	PALLAS; Zoog. Ross. As., ii., p. 150, 1831.
“ <i>melanoptera,</i>	NORDMANN; Bull. Soc. Imp. Nat. Mosc., 1842, pl. 2, p. 314.
“ <i>nordmanni,</i>	FISCHER. tom. cit.
“ <i>pallasii,</i>	“BRUCH.” SCHLEGEL; Rev. Crit. p. 91, 1844.

Specific Characters.—The under wing coverts of a uniform smoky black. Length (French measure) nine inches six lines; wings three inches eight lines; external tail feathers three inches eight lines; middle tail feathers two inches three lines; tarsus one inch five lines; middle toe eight lines; claw of middle toe three lines; beak from gape ten lines; depth of two mandibles, through the nostrils, two lines and a half.—SCHLEGEL.

THIS bird, which is considered specifically distinct from the Pratincole of the British lists, is found in Greece and Bessarabia more plentifully than its congener. According to Pallas, who first described the species in his “Zoographia,” it is very common from April to the

autumn in the deserts of Tartary, from the Volga to the Irtin. To the eastward it is found in Asia Minor, Arabia, and Persia, while southwards it penetrates for some considerable distance into Africa. Hartlaub includes it amongst the birds of West Africa, and both Verreaux and Du Chaillu have reported it from the Gaboon; Anderson found it in Damaraland on the South West. On the East coast it has been met with by various authorities in Egypt, Nubia, Red Sea shore, Zambesi, Natal, and Cape Colony.

Schlegel, in his "Revue," p. 91, gives a lengthened account of this bird, in which he says it is at once distinguished from *G. pratincola* (Linnaeus) by the following characters:—The beak is thinner, shorter, and more curved; the tarsi are longer, and the toes shorter; the tail is shorter, and it only has the extremities of the elongated feathers black; the throat is white, and the wings underneath are of a uniform smoky black, while in *G. pratincola* these parts are of a lively russet brown. This latter characteristic led Professor Nordmann to call it *Glareola melanoptera*, while Fischer the same year, out of compliment to his colleague, named it *G. nordmanni*.

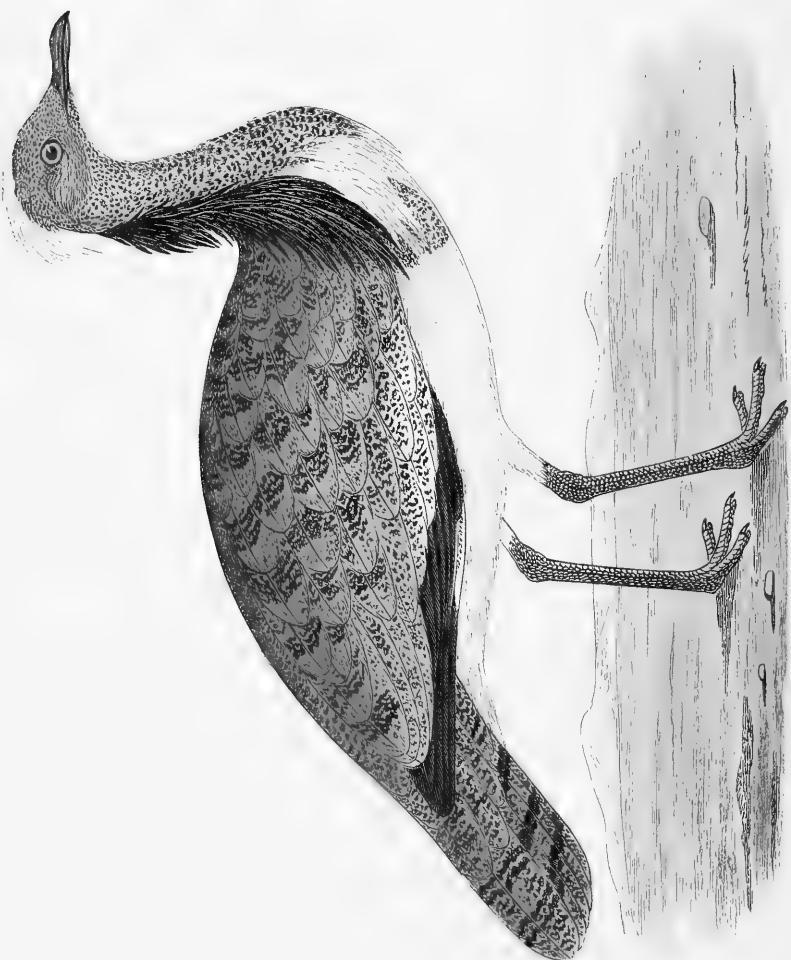
Pallas states that it is always found in small flocks, congregating more numerously after the breeding-season. It never frequents water, but is always found in arid and especially salt plains, where it seeks grasshoppers and other insects.

It runs as fast as a Plover, and is equally afraid of man. It flies away when flushed, uttering the cry 'tirik-tirik,' like a Tern. It migrates early to the south.

It differs so little in plumage from the well-known Pratincole, that I have not thought it necessary to give a figure, and I have stated all the points in which it diverges structurally or ornamentally from that bird.

It is figured by Pallas, Zoog., pl. 2; by Nordmann in the Bulletin of Moscow, 1842, pl. 2, and an excellent plate of the species will be found in the Ibis for 1868, (plate viii.,) in illustration of a paper by Mr. J. H. Gurney, entitled, "Notes on Mr. Layard's 'Birds of South Africa.' "

The egg has been described by Mr. Harting (P.Z.S., 1874, p. 454) from specimens received from Southern Russia through Herr Moeschler.



H. C. TAYLOR BUSTARD.

ORDER XII.—CURSORES.

Family OTIDIDÆ. (*Bonaparte.*)Genus OTIS. (*Linnæus.*)

Generic Characters.—Beak shorter, or not exceeding the length of the head, straight, conic, compressed, the point of the upper mandible curved. nostrils oval, open, lateral, and a little removed from the base. Feet long, naked above the knee. Three toes, all in front, short, united at the base, and bordered with a membrane. Wings moderate, the first quill half the length of, and the second rather shorter than the third, which is the longest in the wing.

RUFFED BUSTARD.

Otis houbara.

<i>Otis houbara, et rhaad,</i>	GMELIN.
<i>Psophia undulata,</i>	JACQUIN.
<i>Chlamydota houbara,</i>	LESSON.
<i>Houbara undulata,</i>	BONAPARTE.
“ <i>houbara,</i>	GRAY; Hand List.
<i>Outarde houbara,</i>	OF THE FRENCH.
<i>Kragentrappe,</i>	OF THE GERMANS.

Specific Characters.—Beak long and much depressed at the base; a crest of white feathers on the vertex, and a long and strong mass of brownish black and white feathers hanging as a pendant from the back of the neck on each side. Length twenty-four inches; from carpus to tip fourteen inches; tarsus four inches; middle toe two inches; beak two inches and one tenth.

THE Ruffed Bustard, or, as it was also called by Latham, the Undulated Trumpeter, is only an accidental visitor in Europe. It is however found wandering from its African home into Spain, Portugal,

Silesia, Dalmatia, Turkey, Greece, Germany, Switzerland, and Belgium. It is found especially in the north of Africa, being common in plains between the mountains and the coast in the neighbourhood of Tripoli, Tunis, and Constantine. Canon Tristram says it occurs throughout the Sahara, but becomes rare in the south, though most abundant about the Dayats, and to the edge of the Chebka M'zab. It is also found in Arabia.

Salvadori (*Fauna d'Italia*) writes of this bird:—"Wright says (*Ibis*, 1864, p. 140,) that about twenty years ago a male bird was taken in Malta during a tempest. Also not very far from Rome two females were killed, one during the latter part of November, 1869, and the other on the following 16th. of December. At this time strong south winds prevailed. The first was given to the Zoological Museum of the University of Rome; the other is preserved in the collection of Maximilian Lezzani, an enthusiastic ornithologist. Bonaparte supposes that the Houbara may have been captured in Sicily, and Mr. Saunders, and more recently Professor Doderlein, mention an individual preserved in the Museum of Syracuse, as having been taken in that neighbourhood."

In the first volume of the "*Ibis*," page 284, Canon Tristram has given a most interesting account of the Houbara, or, as Temminck tells us we ought to spell it, the Hubara Bustard, and he has gone at some length into details of Falconry as pursued by the Arabs. I need make no apology for quoting the following long extract from this graphic and interesting description. The Saker Falcon, which the writer says is found more in the desert, and the Lanner Falcon, (*Ibis*, vol. i., p. 284,) are those which are chiefly used by the Arab sportsmen; and they prize them so highly that £40 was offered in vain for a live specimen.

"The Arab Sheiks," he says, "pursue the sport of Falconry with all the zeal, skill, and science of the 'noble mysterie' of our ancestors. The villein who presumed to raise his head against the king's deer was not more certain of condign punishment from the Norman, than the plebeian Sehaur who should dare to cast a hawk in the Sahara. No Aga or Sheik of high degree ever moves for war, business, or pleasure unattended by his falconers, who are his confidential lieutenants. The care of three Falcons is considered sufficient employment for one falconer with an assistant; and on the march one or two of these important personages follow, mounted immediately behind the Sheik, with a hooded Falcon on the wrist, and one perched on each shoulder. The Houbara Bustard is the favourite quarry; but Eagles, Kites, Sand Grouse, (and in the case of the Saker Falcon, the gazelle,) afford equal sport to the huntsman."

"When a Bustard is desiered, the whole calvalcade instantly halt; the Hawk on the wrist is transferred to the hand of his master, who, attended by his falconers alone, instantly sets off, and unhooding his bird, *throws* him from his wrist towards the Bustard. Much skill is exercised in drawing the attention of the Falcon to the Bustard before it rises. Should it unfortunately take wing before its pursuer has poised herself above it, an ill-trained or impetuous bird is very apt to strike it in the air. This, according to the view of your desert connoisseur, is a most unpardonable and unsportsman-like offence, to be punished with death. A skilful Hawk will at once rise to a considerable height, thence swooping down, make feints until the Bustard takes to its legs instead of its wings. The Falcon then poises herself over it, while a second is flung off the wrist, and the two together give chase, the speed of the Houbara being such that a fleet Arab can scarcely keep up with the pursuit.

"The poor bird runs along, aiding its speed by a perpetual fanning with its wings, its head stretched forward like a Corncrake's, and its conspicuous black and white ruff folded closely back over its neck—a pitiable contrast to the proud fellow who was lately strutting with head erect, elevated crest, and expanded ruff, challenging all comers. The pursuers hang over him—only a few yards above him; and at each effort he makes to take wing, swoop down with a feint. It is considered the excellency of a Falcon to make these feints at a quarry until it is nearly exhausted, when the fatal swoop is made, and the bird instantly drops, struck dead by the hind claw having pierced its spine. This manner of hawking is probably practised both to afford more prolonged excitement to the horseman, but chiefly from the mode of self-defence adopted by the Houbara, and which I have had various opportunities of observing myself. As the Hawk approaches, the Houbara ejects both from the mouth and vent a slimy fluid. A well-trained bird eludes this shower by repeated feints until the quarry's supply of moisture is exhausted; an impatient one rushes in and gets his feathers and whole plumage so bedaubed, that his flight is materially impeded, and his swoop, when made, is irresolute."

"With a leash of Falcons, two Haggards, and a Tiercel Saker, I have known three Houbaras and a Sand Grouse or two captured in a day, and the chase was terminated merely on account of the fatigue of the horses. I was never actually present at the chase of the gazelle, but it is very commonly practised, and I have seen a gazelle brought into camp that had been so taken. This sport, however, requires more birds, and is very dangerous to the Falcons,

who frequently impale themselves on the horns of their prey. It is not uncommon for both pursuer and victim to fall dead at one mutual stroke."

The Ruffed Bustard, like the rest of the family, is a shy bird, frequenting the wild desert, and rarely coming near a human dwelling, or where it is likely to meet with an enemy. In the spring the males have grand battles with each other for the possession of the females, asserting and maintaining their right to have a plurality of wives, in which combats the older birds are generally victorious.

The females scrape a hole in the sand, in which, says Canon Tristram, they lay three, sometimes only two, eggs. They will desert the nest if it is disturbed during incubation. Degland and some other writers give five as the maximum number of eggs. The young when born are covered with down, and immediately, like other gallinaceous birds, follow their mother in search of food.

The Bustard is both granivorous and insectivorous. According to some authors they will feed also upon frogs, toads, and lizards; and M. Jules Verreaux informs us that in Africa he has often seen them kill and eat snakes. In the combat they principally make use of their wings, killing their prey by violent blows.

The male has the top of the head white, the feathers being prolonged into a crest, which is bordered on each side by elongated feathers of a russet brown, spotted with black. Sides of the head, throat, and upper part of the neck, and nape, grey, the last being partly hidden by the elongated feathers of the crest. From the back of the neck extends on each side long stiff feathers, above black, below white, forming a ruff. The rest of the upper parts, namely, scapularies, back, upper wing and tail coverts, and upper tail feathers, russet brown, barred and crossed with darker brown; the tints varying from light brown on the back to greyish brown on the shoulders and lower part of the wing coverts, and to dark russet on the upper tail feathers; primaries, the first four white, with about four inches and a half of the distal extremities of the first two, and three inches of the third and fourth black brown; the outer web of the first spotted cream-colour; the rest of the primaries dark brown black, tipped with white; secondaries dark brown black. Lower part of the neck, abdomen, and under wing coverts, pure white, the shoulders russet and brown; under tail coverts whitish, with dots and zigzags of russet and brown on the distal half. Tail feathers below cream-colour, shaded with russet, and marked with brown spots, and barred with three broad black bands; above they are

barred alternately with black and dark russet; the end light cream-colour. Beak brownish grey; feet greenish; iris colourless.

The female differs but little from the male. It is rather smaller, and the colours are less lively. According to De Fontaine, ("Memoires de l' Academie des Sciences,") she carries like him a crest and a ruff; but Temminck says she has neither; the head and top of the neck whitish, starred with brown spots; the feathers of the ruff are short and silky; the front of the neck russet, with small spots and zigzags of brown.

According to Degland, the young males have the feathers of the crest shorter, with delicate ash-coloured streaks, and russet towards their extremities; the black and white feathers of the ruff of equal length, varied with brown and whitish; back and wings isabelle red, varied with brown zigzags and black spots; front of the neck russet, also varied with brown zigzags.

My figures of this bird and its egg are from specimens kindly sent me by Canon Tristram. The former, from the Sahara, is marked June 7th., 1856.

The species has been figured by Naumann, pl. 170, and Gould, pl. 268

ORDER XIII.—GRALLATORES.

Family CHARADRIIDÆ. (Bonaparte.)
Genus CHARADRIUS. (Linnæus.)

Generic Characters.—Bill shorter than the head, slender, straight, compressed at its base, and swollen at its point; nasal furrow prolonged for two thirds of its length. Nostrils basal, lateral, linear, longitudinally cleft in the membrane of the furrow. Feet long, or of moderate length, slender; three toes all in front, the outer toe slightly connected at the base to the middle toe by a membrane; the inner one free. Tail slightly rounded or square. Wings moderate,—the first quill slightly shorter than the second, which is the longest in the wing.

ASIATIC GOLDEN PLOVER.

Charadrius fulvus.

<i>Charadrius fulvus,</i>	GMELIN; Syst. Nat. i., p. 687, (1788.)
“ <i>pluvialis,</i>	PALLAS; Zoog. Ross. As., ii., p. 141, (1811.)
“ “	JARDINE; Ill. Orn., pl. 85, (1830.)
“ <i>pluvialis orientalis,</i>	SCHLEGEL; Faun. Japon., p. 106, (1842.)
<i>Pluvialis longipes,</i>	“TEMMINCK.” BONAPARTE; Compt. Rend., 1856, p. 417.

Specific Characters.—Always to be distinguished from *pluvialis* by its smaller size, comparatively longer legs, and grey instead of white axillaries.

THIS very distinct species of Golden Plover, an inhabitant of Asia, the Malay Archipelago, Australia, and New Zealand, comes occasionally within the European limits. It has been observed at Heligoland, (c.f. Ibis, 1862, p. 71,) and is seen in Malta every second or third year, generally early in spring, and not in company with *pluvialis*, but solitarily or in pairs.

In the “Ibis” for 1865, Mr. Wright, the zealous naturalist of the island of Malta, writes, “I have to record the capture of a second



ASIATIC GOLDWING PLOVER,

specimen of this denizen of Asia, which, always excepting that extraordinary rendezvous for exotic and little-known species—Heligoland, is the only spot in Europe in which it has hitherto been found. This example was shot in May, 1861, and consequently it was in summer plumage; and before handling it I mistook it for a small specimen of *C. pluvialis* in bad condition. It was possessed by a Maltese bird-stuffer, merely on account of its being in a state of plumage not noticed before in this island, the common Golden Plover, its close ally, being known here only in its winter dress."

* * * "The legs and toes of *C. longipes* are more slender, and the general appearance is smaller, the head is considerably smaller, and especially remarkable in being much narrower across the tip."

According to Mr. Swinhoe, (Ibis, 1863, p. 404,) this species is common near Canton, and passes the summer there. In Formosa it remains all the year round, breeding in great abundance on the southwest marshy plains. The eggs, four in number, are laid in a loose nest of dried grasses and fibres placed in a hollow. They are of a yellowish grey ground-colour, blotched and spotted with deep blackish sepia, and have occasional obsolete purplish grey spots. They do not vary much in size, are narrowed near the end, and measure 1.5 by 1.1 inches.

The specimen from which my figure is taken was kindly sent to me by Mr. Harting. It is a female, and was obtained at Hakodadi, Japan, October 3rd., 1865, by Mr. H. Whitley. The length of the bird in the flesh was nine inches and two eighths, and of the wing six inches and a half. In the skin the tarsus is exactly one inch and three fifths long. Bill one inch. It has the top of the head, neck, back, and upper tail feathers distinctly marked with black and fulvous yellow. Wing feathers black, edged with white on their inner borders. Throat white. Cheeks, sides of neck, and all under parts more or less mottled with indistinct yellow and brown; axillaries grey, like the rest of the under wing; under tail coverts white. Tail feathers grey, with fulvous markings.

Coloured figures of this species will be found in Jardine's "Illustrations of Ornithology," 1830, pl. 85; in Temminck and Schlegel's "Fauna Japonica," 1842, pl. 62; in Gould's "Birds of Australia," fol. vi., pl. 13; and in Sharpe and Dresser's recently published "Birds of Europe."

GRALLATORES.

Family CHARADRIIDÆ. (Bonaparte.)
Genus CHÆTUSIA. (Bonaparte.)

Generic Characters.—Bill stronger than in the restricted genus *Vanellus*; head not crested; plumage ashy; wings moderate; no spur on the carpus; tarsi moderately long; toes four, as in *Vanellus*.

SOCIAL PLOVER.

Chætusia gregaria.

<i>Chætusia gregaria,</i>	BONAPARTE; Icon. Faun. Ital. pl., (1832-41.)
<i>Vanellus gregarius,</i>	VIEILLOT; Dict. d'Hist. Nat.
“ <i>keptuschka,</i>	TEMMINCK; Man. d'Orn. iv., p. 360, (1820.)
<i>Charadrius gregarius,</i>	PALLAS; Reise, i., p. 456, (1771.)
“ <i>ventralis,</i>	“WAGLER,” GRAY, and HARDW., Ill. Ind. Orn., pl., (1829.) <i>Nec</i> WAGLER.
<i>Tringa fasciata,</i>	GMELIN; Syst. Nat. i., p. 671, (1788.)
“ <i>keptuschka,</i>	GMELIN; op. cit.
<i>Vanneau pluvier social,</i>	OF THE FRENCH.
<i>Geseliger Regenpfeiferkiebietz,</i>	OF THE GERMANS.

Specific Characters.—Upper plumage greyish brown; superciliary streak, occiput, sides of head, throat, under tail coverts, and lateral tail feathers, pure white; no crest, or spurs on the wings. Length twelve to thirteen inches; wing, from carpus to tip, seven inches and a half to eight inches; tarsus two inches; middle toe one inch and a quarter; naked part of thigh one inch; bill one inch and a quarter.

THE Social or Gregarious Plover is an Asiatic species, which is found also inhabiting the southern parts of Russia, especially the swampy plains on the borders of the Volga, from whence it wanders to the Crimea, and occasionally into Poland. Its appearance in other



SOCIAL PLÖVER.

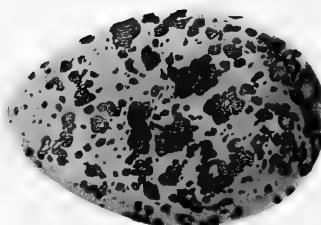
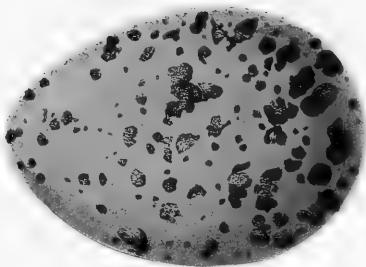


PLATE CXLIX. OSMOSIS.

COFFEE PLANT, 1000 FEET. SPURS, 1000 FEET.

parts of Europe is accidental. It has, however, occurred in Hungary, Dalmatia, Germany, and Italy. Mr. Saunders thinks he saw a specimen of this bird in February, 1868, hanging up in the market at Cadiz, in a semi-putrid state, so that it would have been impossible to preserve it. (See the *Ibis*, 1871, p. 386.) Pallas met with it in great numbers at Jäik and Samara, on the Volga. It has also been found in Persia, Syria, and Sinai. M. Nordmann says that he has no doubt it nests in the south of Russia, and Temminck re-affirms this; but neither adduces any instance of a nest having been found.

Dr. Leith Adams informs me that he found the Social Plover pretty common in the Punjab; and Captain (now Colonel) Irby includes it in his list of birds observed in Oudh and Kumaon. In India it is known as the Keptusca or Cawnpore Sandpiper: I quote his own words, ("*Ibis*," 1861, p. 238.)—"Exceedingly common on open sandy plains, in January, February, and March. Never seen alone, but in flocks of from six to upwards of fifty. When on the ground they appear at first sight very like the Golden Plover, but upon taking wing they resemble *Sarciophorus bilobus* or *Lobivanellus cinereus*, shewing a great deal of white in the wings, but flying close to the ground, unlike the other Plovers."

There is not much known with certainty about the nidification and habits of the Social Plover. Its egg has been in collections only during the last two or three years. It is said, however, to congregate in large flocks in Chinese Tartary and Southern Russia, and to breed in companies more or less numerous, like our well known Lapwing. The egg, according to Bädeker, is like that of the Lapwing, but not difficult to distinguish. It is larger and more swollen in shape, and the ground colouring is a clear greenish, often passing, towards the larger end, into reddish yellow. It is covered with brown and blackish brown spots, which are of a roundish or semicircular shape.

The adult male has the top of the head, a line from the gape through the eyes, the primaries, lower part of abdomen, and a band across the end of the tail, black; a band round the vertex, throat, under wing and tail coverts, and secondary quill feathers, white, the latter having small patches of liver brown on their outer webs at the end; nape, scapulars, back, and upper wing and tail coverts, grey brown; sides of the head and neck fawn-colour; chest and crop smoky brown, terminating in deep black below the abdomen, which black again terminates in feathers strongly marked with liver brown; flanks white; tail white, with a black band near the end, the most lateral feather being pure white; bill, legs, and feet black.

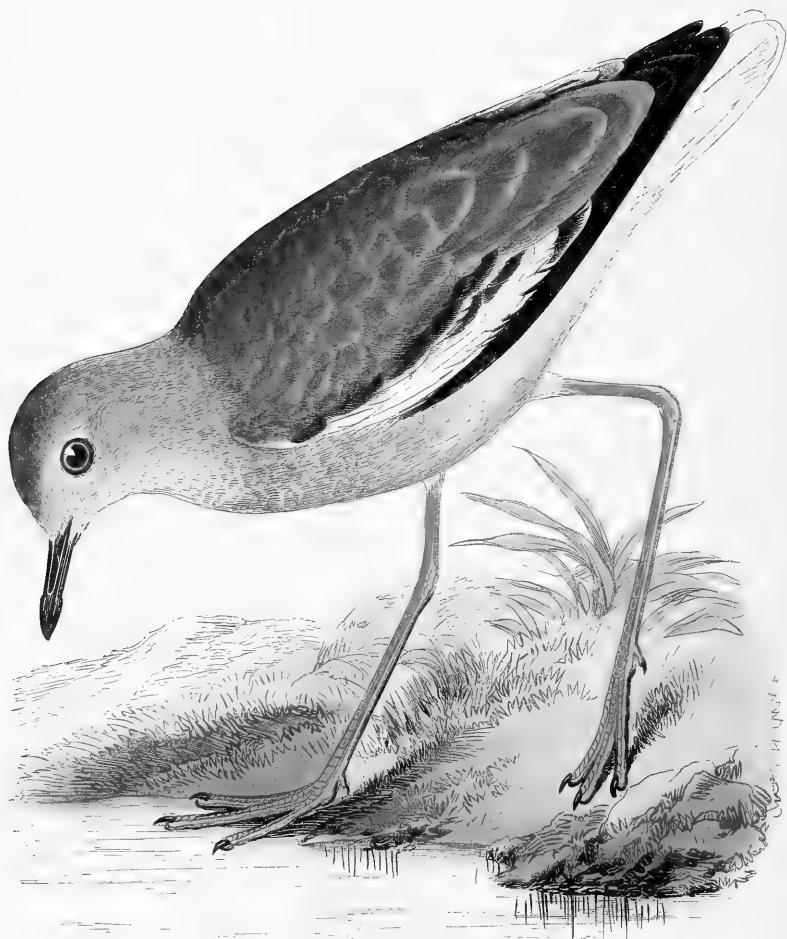
The female resembles the male, but the tints are less pure, and more diffused, particularly the under parts.

The young of the year, according to Degland, have the top of the head grey brown, bordered with russet; wing coverts and wings olive brown, with lighter brown borders; forehead and superciliary streak very bright buff; throat white; sides of the head, neck, and crop, spotted like the wing coverts; abdomen pure white, the rest as in adults. This description fairly corresponds with specimens of the young in the collection of Mr. Harting.

My figure is taken from a specimen from the Volga, sent me by Canon Tristram. The egg is in my own collection; it was taken in South Russia, and sent to me by Herr Moeschler. I have also a series taken by Herr Glitsch in South Russia.

The species has been figured by Bonaparte, Faun. Ital., pl. 41; and Gould, Birds of Europe, pl. 292.

Mr. Harting informs me that Gray and Hardwick's plate, in their "Illustrations of Indian Ornithology," of the "Black-sided Sandpiper" of Latham, which they identify with *Charadrius ventralis* of Wagler, is referable to the present species, and that *Charadrius ventralis* of Wagler is the Indian Spur-winged Plover. The latter, however, is figured on another plate in the same work, and there correctly designated. By some confusion the authors have figured two very different species under the same name.



" RITE-TAILED PLOVER.

GRALLATORES.

Family CHARADRIIDÆ. (Bonaparte.)
Genus CHÆTUSIA. (Bonaparte.)

WHITE-TAILED PLOVER.

Chætusia leucura.

<i>Chætusia leucura,</i>	"LICHENSTEIN." EVERSMAN; Reise Bokh., p. 137. (1823.)
" <i>flavipes,</i>	SAVIGNY; Descrip. de l'Egypte, t. 6, fig. 2. (1825.)
" <i>villotaei,</i>	AUDOUIN; op. cit.
" <i>flavipes,</i>	WRIGHT; Ibis, 1865, pl. 10. GRAY; Hand List, No. 9956.
" <i>aralensis,</i>	EVERSMAN; Bull. Mosc., xxvi., p. 2, p. 497.
" <i>grallarius,</i>	LESSON; Traité d'Orn., p. 542, (1831.)

Specific Characters.—Head, neck, breast, and upper portions of the plumage vinous grey. Primaries black; secondaries white. Chin and tail white. Legs and feet yellow. Eye large; iris hazel; eyelids red. Length eleven inches; wing from carpus to tip seven inches. Tarsus three inches; middle toe one inch and three tenths. Bill one inch and three tenths. Tail three inches and two tenths.

THIS bird was first noticed in Europe at Montpellier, in the south of France, (see Crespon, "Faune Meridionale," (1844,) and Jaubert, "Rich. Orn. Midi France," p. 452,) and is known to breed in South Russia, in the neighbourhood of Sarepta (see "Revue et Mag. de Zoologie," third series, 1874, p. 235.) It is therefore a welcome addition to our list.

Mr. Charles A. Wright, C.M.Z.S., in the "Ibis" for 1865, p. 459, in his second Appendix to the Birds of Malta and Gozo, has the following observations:—"On the 18th. of Octo[r.] 1864, in one of my

frequent visits to the game stalls in the Malta market, my attention was struck by a strange-looking bird, which was offered me for sale as a Cream-coloured Courser—a somewhat rare visitor, but of which I had picked up in the course of several years from the same stall one or two specimens, and a few others from other sources. This it certainly was not. On consulting such books as I had at hand I could find nothing answering to it in Bree's "Birds of Europe," or Degland's "Ornithologie Européenne," and being sure it did not belong to any species hitherto observed in England, I was altogether at a loss to know what it was. The short description in the "Ibis" for 1859, (pp. 52-53,) of *Vanellus leucurus*, given by Mr. E. C. Taylor in his "Ornithological Reminiscences of Egypt," to which I subsequently referred, was sufficient to satisfy me that I was in possession of one of those birds so rare in European collections that Mr. Taylor observes there is but one unnamed footless specimen in the British Museum; and in the Paris Museum at the Jardin des Plantes he could not find it at all. It was, he adds, perhaps the rarest species which he and his party met with in Egypt, though in an extensive tract of marshy country, a few miles south-west of Thebes, it was abundant, and several were shot. In confirmation of this I am told that a gentleman who returned to Egypt this winter, met with a good many near Thebes during his visit last year."

In the "Richesses Ornithologiques du Midi de la France" of MM. Jaubert and Barthelemy-Lapommeraye, p. 452, is an account of the capture of a second specimen at Montpellier. This specimen is in the collection of M. Doumet at Cette.

According to Von Heuglin, it is only a passenger through North-east Africa and Central and Southern India.

The following I extract from Jerdon's "Birds of India":—"The White-tailed Lapwing is a rare bird in India. I procured it only once, on the margin of the large lake at Bhopal, in Central India, in December, where it occurred in small flocks. My attention was first called to it by its peculiar cry. Blyth procured one specimen from the Calcutta Bazaar; it was once procured in the Dehra Doon, and no other record of its occurrence in India is noted. It is however stated not to be rare in Affghanistan, where it is called *Chiric*. Out of India it is chiefly known as an inhabitant of Northern Africa, and it is said to be abundant in marshes near Thebes. At the time that Canon Tristram published his account of its occurrence there, it was stated by him to be rare in European Museums; only one bad specimen existing in the British Museum, and none in that of Paris."

Not much is known about its nidification, but I learn from Mr.

Harting that an interesting article from M. Vian on the breeding of this bird in European Russia is published in the "Revue et Magazin de Zoologie" for 1874.

Through the kindness of Mr. Harting I am enabled to describe and figure a male bird in that gentleman's collection. It was shot in Egypt by Captain Shelley on the 21st. of February, 1870.

This bird has the crown of the head brown, shading off to lighter on the nape, cheek, and sides of neck. The back is a bronzy isabel. Tail coverts darker brown; the tail being pure white. The wing has the primaries pitch black, their extreme ends being very faintly edged with lighter; the first three primaries are nearly equal, the second the longest. The secondaries are pure white, the first four being more or less tipped with dark brown: this gives the conspicuous white band on the wing. The wing coverts are isabel, edged with black; the long secondaries, going to nearly the middle of the tail, isabel brown, tipped with white. The shoulders are white, with here and there a black feather. Under wing coverts pure white. Chin whitish; breast light brown; abdomen dusky; under tail coverts and lower abdomen tawny; flanks white. Legs and feet yellow.

I have the pleasure of figuring also, for I believe the first time, an egg, the drawing of which was made for this work by Dr. von Heuglin.

GRALLATORES.

Family CHARADRIIDÆ. (Bonaparte.)
Genus *HOPLOPTERUS*.

Generic Characters.—Wings furnished with a long and stout, slightly curved, horny spur, present at all seasons; no hind toe; otherwise as in *Vanellus*.—BONAPARTE.

SPUR-WINGED PLOVER.

Hoplopterus spinosus.

<i>Charadrius spinosus,</i>	LINNÆUS; Syst. Nat. i., p. 256, (1766.)
<i>Vanellus melasomus,</i>	SWAINSON; Birds W. Afr. ii., p. 237, (1837.)
<i>Hoplopterus spinosus,</i>	BONAPARTE; List, (1838,) p. 46.
“ “ “	KEYS. ET BLAS.; Wirbelth. Eur., (1840.)
<i>Pluvier armé commun,</i>	OF THE FRENCH.
<i>Gemeiner Spornkiebitz,</i>	OF THE GERMANS.

Specific Characters.—Forehead and crown black, the feathers of the occiput elongated into a crest; throat, breast and upper portion of the abdomen, distal half of tail and primaries black; sides of face and neck, as also the nape, lower part of abdomen, and basal half of tail pure white. Dorsal plumage and wing coverts hair brown, inclining to ashy grey, a sharp strong spur on each carpal joint. Length eleven inches; wing from carpal joint eight inches; tarsus two inches and a half; bill one inch and one fifth; tail three inches and a half.

THE European localities of the Spur-winged Plover are Turkey, Greece, Russia, and occasionally Sicily and Malta. M. Nordmann records having shot a male out of a flock of eight or ten, near Odessa, in 1837, in company with a large flock of the Sociable Plover, *Chætusia gregaria*. In Africa it has a wide range. It is very common in Senegal, whence it derives the name given to it



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by Brisson. Mr. Taylor (*Ibis*, vol. i, p. 58,) says it is about the commonest bird in Egypt, and very tame. I do not find it included in Captain Loche's "Catalogue of the Avifauna of Algeria." In Asia we have it recorded by Canon Tristram, in his "Notes on Birds Observed in Southern Palestine," (*Ibis*, vol. i, p. 36,) two specimens having been seen on the banks of the Jordan.

Temminck suggests the probability of the Spur-winged Plover breeding in the south of Russia, but I am not aware of any nests having been found there.

The egg which I have figured was taken by Canon Tristram himself, at Boulac, Egypt, who has kindly added the following remark from his notes:—"I took the nest of *Vanellus spinosus*, in a field on the hill opposite Boulac, on March 1st., 1858. The field was fallow, and the four eggs laid after the manner of the Lapwings, on the bare ground, in a slight depression. The bird, which had not begun to sit, ran a few yards straight from her eggs, and then, after the manner of the Lapwing, feigned lameness, and vociferously repeated its shrill note, which is much more sharp and harsh than that of our Lapwing. Finding that I continued to search about the spot where I had first detected her, she took to her wings, and kept tumbling over head just in front of me; and in a few minutes was joined by her mate, who vehemently seconded her efforts to draw me onwards.

"The habits of this bird in every respect resemble those of its English congener; but it is more easy of approach, probably from being less persecuted. It is one of the most abundant birds on the cultivated banks of the Nile, several pairs being found in every field."

I copy the following from Bädeker:—"The nest is placed in a hole in the sand, either in an island or field. It lays from three to six eggs: these are one inch three lines long, and about an inch broad. The ground-colour, difficult to describe, is mixed up with green, grey, and yellow. This ground-colour is covered with black and dark brown spots, which only at the point leave the ground-colour free, while they entirely cover the thick end. The bird leaves the nest at the approach of man, with shrill screams, and flies, like the Lapwing, round the intruder. In some nests I found damp earth in layers between the eggs, or covered with it to conceal them. The young birds resemble the old ones, even in their nest plumage."

Captain Shelley has detailed the breeding habits of this species in his "Birds of Egypt," p. 232; and some further remarks on the subject

will be found in a paper by Mr. Harting, "On the Eggs of Little-known *Limicolæ*," published in the Proceedings of the Zoological Society, 1874, p. 456.

The Spur-winged Plover has the top of the head, throat, neck, abdomen, primary wing feathers, and end of tail black; sides of the head, nape, rump, under wing and tail coverts, shoulders, and lower part of abdomen pure white; back and wing coverts light brown; beak and feet black; iris deep red. The plumage is alike in both sexes.

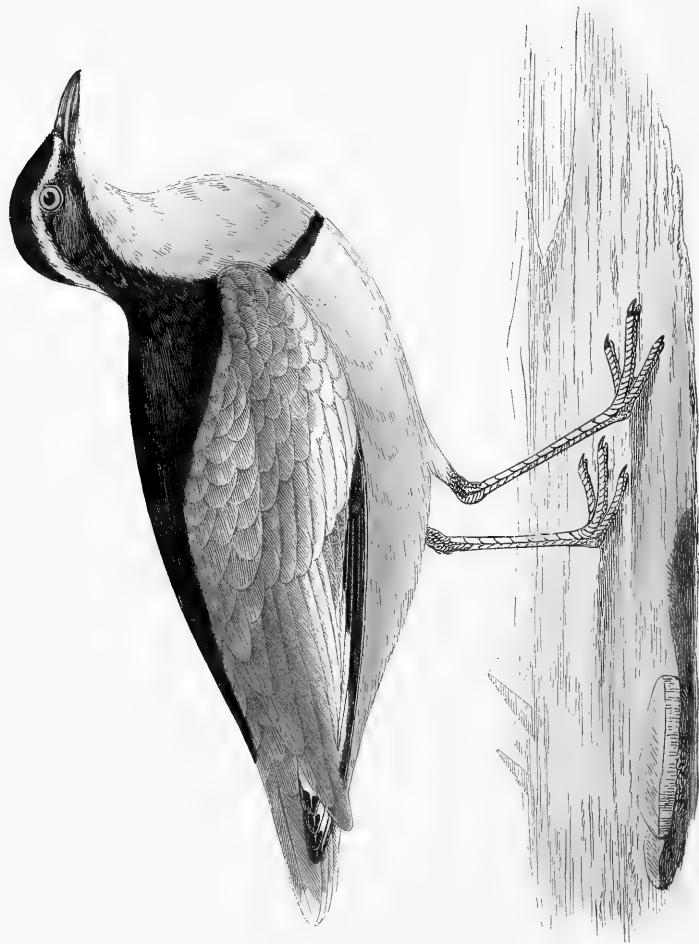
Dr. Leith Adams (*Ibis*, 1864, p. 29,) identifies this species, and not the next (*Pluvianus aegyptius*), with the *Trochilus* of Herodotus; and Mr. Stafford Allen, who had similar opportunities of studying the species in Egypt (c. f. tom. cit., p. 240), agrees with him.

Mr. E. C. Taylor, however, (*Ibis*, 1859, p. 52,) maintains that *Pluvianus aegyptius* is the species referred to (*vide infra*), and Mr. Harting thinks there is little doubt that he is right; since "the friend of the crocodile" is more likely to have been the smaller species which frequents the shoals and sand-flats, than the larger bird which is more frequently found in the cultivated parts of the country.

My figure of the bird is taken from a specimen killed in Egypt, in March, 1858, kindly sent me by Canon Tristram. The egg has been already referred to.

The species has been figured by Brisson, vol. v., pl. 7, fig. 2; Savigny, *Egypte*, pl. 6, fig. 3; Gould, B. of E., pl. 293; Swainson, B. W. Afr. ii, pl. 26, and others.





SHORE BIRD
VOL. I, PL. 3.

GRALLATORES.

Family CHARADRIIDÆ. (Bonaparte.)
Genus PLUVIANUS. (Vieillot.)

Generic Characters.—Bill thick at base, compressed towards the middle, pointed, superior mandible slightly arched, inferior straight; nostrils oblong, covered with a membrane. Three slender toes, directed forward, united at their base by a small membrane. No hind toe. The first quill feather the longest of all. The middle claw with the inner edge dilated and finely serrated.—VIEILLOT.

EGYPTIAN PLOVER.

Pluvianus aegyptius.

<i>Charadrius aegyptius,</i>	HASSELQUIST; Reise, 311, (1752.)
“ “ “	LINNÆUS; Syst. Nat., i., p. 254, (1766.)
“ <i>melanocephalus,</i>	GMELIN; Syst. Nat., i., p. 692, (1788.)
“ <i>chlorocephalus,</i>	VIEILLOT; Gal. Ois., pl. 233.
<i>Pluvianus aegyptius,</i>	HARTLAUB; Ornith. West Africas, p. 209.
“ “ “	GRAY; Hand List, No. 10035.
<i>Cursor charadrioides,</i>	WAGLER; Syst. Av., No. 6, (1827.)
<i>Ammoptila charadrioides,</i>	SWAINSON; Classification of Birds,
<i>Cheilodromas melanocephalus,</i>	p. 364, (1837.)
<i>Pluvian melanoccephale,</i>	RÜPPELL; Mus. Senkenb., ii., p. 208. OF THE FRENCH.

Specific Characters.—Forehead, crown, nape, centre of back, and pectoral band black; superciliary streak and chin white; breast, flanks, and under tail coverts pale buffy white. Primaries black, each feather medially and broadly marked on both webs with white; secondaries white, with the apex black; scapulars nearly as long as the longest primary. Length from tip of bill to end of tail nine inches; wing five inches and three fifths; tail two inches and seven tenths. Bill from forehead three fifths, from rictus four fifths of an inch; tarsus one inch and three fifths; middle toe and claw one inch.

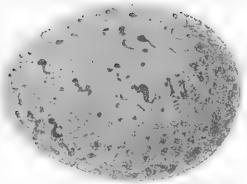
THE Egyptian, or Black-headed Plover inhabits north, north-east, and north-west Africa, and is occasionally found in Europe. Degland says that it has been captured in the south of France; and M. Crespon, in the "Faune Meridionale," mentions a female having been killed by M. Lebrun, in Hérault, on the 20th. of November, 1840. Hartlaub gives Spain as a locality. In the "Zoologist" for 1853, p. 4096, Mr. Gurney has recorded its accidental occurrence so far north as Sweden, where a specimen was shot by an Englishman near Stockholm.

There is no doubt, however, that it is extremely rare as a European species, and I only introduce it as an accidental visitor, and because it ought to be well known to ornithologists, should it turn up more frequently in the south of Europe.

Mr. E. Cavenish Taylor informs me it is very common in Egypt; where, however, it confines itself to the shores and sand banks of the Nile, from which it seems to derive its food. Captain Loche says it occurs only accidentally in Algeria. A specimen was shot by Mr. Herschel in the Jordan Valley, as recorded in the "Ibis," 1862, p. 279.

Mr. Taylor says that he generally found it paired in the months of December and January. It was very tame, and when it rose uttered a loud shrill note, from which both it and *Ch. spinosus* are called by the Arabs Zic Zac. The flesh dark coloured, and not very good eating.

In the "Ibis," vol. i, p. 52, Mr. Taylor, in his "Reminiscence of Egypt," has the following note about this bird:—"I did not see this very pretty species below Cairo, but above I found it very numerous. Irides dark brown; legs and feet pale blue; toes three in number. This bird enjoys the credit of being the *trochilos* of Herodotus, which he mentions as living on such terms of intimacy with the crocodile. The account which that veracious historian gives of the *entente cordiale* between these apparently ill-assorted allies, is as follows:—'As the crocodile lives chiefly on the river, it has the inside of its mouth constantly covered with leeches; hence it happens that while all other birds and beasts avoid it, with the *trochilos* it lives at peace, since it owes much to that bird; for the crocodile, when he leaves the water, and comes out upon the land, is in the habit of lying with his mouth wide open, facing the western breeze; at such times the *trochilos* goes into his mouth and devours the leeches. This benefits the crocodile, who is pleased, and takes care not to hurt the *trochilos*.—Herod. book ii, end of chap. viii. As a matter of fact I seldom saw a crocodile on land without seeing a *Pluvianus aegyptius* near him.'



EGYPTIAN PLOVER.

ASIATIC PLOVER.

The following is from Bädeker:—"This inhabitant of Egypt has also been shot on the Guadalquivir,* and in other places in the south of Europe. It breeds on the sandy islands of the Nile. It scratches a hole in the sand or gravel, and lays four eggs therein. These are very difficult to find, as the vigilant bird, when it observes the approach of man, covers them over before it leaves the nest. The shell is of a dull glaze-red yellow ground colour, with violet grey spots and chesnut brown dots, streaks, and waves, all seen apparently underneath the surface; a species of marking which, as well as the size, though not in the form, brings them near the eggs of *Charadrius cantianus*, (Kentish Plover.) In Sennaar it is often seen near a crocodile, and is hence called 'crocodile guard.'

The egg has recently been figured by Mr. Harting, (P.Z.S., 1874, p. 456, pl. lx, fig. 2,) from a specimen found on a sand-bank near Damietta by Mr. J. H. Cochrane, who shot the old bird in May, 1862.

The male and female have in winter the top and sides of the head and cheeks, the nape, back, a band round the chest, base and tips of the wing feathers, glossy black; the scapularies, wing and tail coverts, and the feathers of the tail, clear slate grey; a band over the eyes, going round the occiput; the throat, under wing coverts, edge of pectoral black band, flanks, end of tail feathers, and distal half of primaries, except the first, (which is entirely black,) pure white; chest, crop, abdomen, thighs, and under tail coverts, clear russet. Beak black; feet and legs green.

The young, according to Degland, (Orn. Europ., vol. ii., p. 87,) have the top of the head, top and sides of the neck, russet grey; back and scapularies isabelle, with reflections of greenish purple; forehead and throat dirty white; crop and top of abdomen of a vinous tint, shaded with violet; under tail coverts clear fawn-colour; small wing coverts like the back, the greater ones ash or whitish, having a black spot and tipped with white; primaries deep black; secondaries and tail feathers pure white; beak black; iris brown; legs yellow. The above description is taken from two female specimens, one killed in Egypt, and the other in France.

I am indebted to Mr. E. Cavendish Taylor for the specimen from which my figure has been taken. It was killed in Egypt, in January, 1854. The egg is copied from Bädeker.

* Mr. Howard Saunders says this must be a mistake. He has been unable to find any authority for the occurrence of this species in any part of Spain.

GRALLATORES.

Family CHARADRIIDÆ. (Bonaparte.)
Genus EUDROMIAS. (Boie.)

Generic Characters.—Bill shorter than the head, slender, compressed and soft at the base, dilated and hardened at the extremity, which is slightly decurved. Nasal furrow extending for two thirds of the length; nostrils basal and linear. Wings long and pointed, the first primary the longest. Tail long and rounded, or with the two central rectrices elongated. Tarsus long and slender, scutellated (not reticulated, as in *Charadrius*). Dorsal plumage plain, or more or less uniformly coloured. A pectoral or abdominal band of a red or black colour, sometimes both.

ASIATIC DOTTEREL.

Eudromias asiaticus.

<i>Eudromias asiaticus,</i>	KEYS. ET BLAS.; Wirbelth. E., p. 268.
“ “ “	G. R. GRAY; List B. Mus., 1844.
“ “ “	HEUGLIN; Syst. Uebers. Vog. N. O. Afr., p. 57, 1856.
“ “ “	HARTING; Ibis, 1870, p. 202, pl. v.
<i>Charadrius asiaticus et caspius,</i>	PALLAS; Reise et Zoogr. R. A.
“ “ “	LATHAM. GMELIN. SCHLEGEL.
“ <i>jugularis</i> ,	WAGLER; Syst. Avium, fol. 5, p. 5, No. 39.
“ “ “	DEMIDOFF; Voyage Ross. Merid. iii., p. 233.
“ <i>damarensis</i> ,	STRICKLAND; Contrib. Orn., 1851.
“ <i>gigas</i> ,	“ BREHM.” BONAPARTE; <i>ut infra</i> .
<i>Morinellus caspius,</i>	BONAPARTE; Comp. Rend., 1856, p. 417.
<i>Cirripedesmus asiaticus,</i>	GOULD; Handb. B. Australia, ii., p. 229, 1865.
<i>Morinellus caspius,</i>	DEGLAND AND GERBE; Orn. Eur., ii., p. 132, 1867.



Specific Characters.—Shaft of first primary white; the next white from the centre; brown at the base. Upper part of plumage of a uniform olive brown, with clear edges to the feathers. Forehead and superciliary ridge white, tinged with rufous. Upper chest dark rufous brown, with a border below of blackish feathers. Length seven inches; wing from carpus five inches and two tenths; tail two inches; tarsus one inch and four fifths; bill one inch.

WE are indebted for almost all we know about this bird to an excellent monograph by Mr. Harting in the "Ibis" for 1870, from which article most of what follows is taken.

This bird has a wide range, being found in Northern China (Swinhoe), Tartary, and the shores of the Caspian Sea (Pallas), Russia (Radde), Odessa (Nordmann), Heligoland (Blasius), Altai Mountains (Mus. Brit.), Palestine, Bay of Acre (Tristram), Red Sea Shore (Heuglin), Abyssinia (Blanford), South Africa (Von Horstock), Colesburg, Cape Colony (Layard), Damaraland (Andersson), Orange River (Verreaux), Algoa Bay (Mus. Brit.).

"The specimens of *E. asiaticus*, which were procured by Pallas about the salt lakes in the southern deserts of Tartary were all in full summer plumage, and the birds were not in flocks; whence it may be inferred it was here discovered in its breeding haunts."

"No subsequent traveller, however, in these regions has yet established the fact, and the eggs still (1870) remain undescribed. Like other species of *Limicolæ*, this Plover, impelled by curious instinct, migrates southward at the approach of winter; and the observations of modern naturalists show that it has a very extensive range. Its usual line of migration appears to be the Red Sea shore and Abyssinia to South and South-west Africa. Nevertheless stragglers from the main body are occasionally carried out of their course, and are found considerably westward of this line. Hence it is that this species has come to be included in the European avifauna. Specimens procured in Russia, on the shores of the Caspian Sea, are in the Museum at St. Petersburg and the British Museum."

"Professor Nordmann states (Voy. Démid. Russ. Mérid., iii., p. 233,) that in April, 1836, a single example was obtained near Odessa. The furthest point westward at which this species has been found is Heligoland, where a solitary example was killed on the 16th. of November, 1850, for which remarkable fact we have the authority of Professor Blasius, (Ibis, 1862,) who, referring to the specimen in the collection of Herr Gätke, observes that it is a young bird, which undoubtedly belongs to this species, and not to *C. pyrrhotorax*, Temminck. It

is therefore quite possible that on some future occasion this bird may occur in England."

I find in an excellent paper by Mr. J. Cordeaux on the Birds obtained by Mr. Gätke in Heligoland, (*Ibis*, 1875, April, p. 185,) that a second specimen was captured in that island on May 19th., 1859—an old male in summer plumage. Canon Tristram shot a specimen near Acre in winter, "where *C. pyrrothorax* was pretty common." (*Ibis*, 1868, p. 323.)

Mr. Blanford, who accompanied the expedition to Abyssinia, brought home two young birds, which Mr. Harting says belong to this species, and in his "Geology and Zoology of Abyssinia," the former naturalist remarks, p. 429, "Apparently less abundant than *Edicnemus affinis* on the coast. I shot some specimens inland at Rairo in Habab in August. They were in flocks on open grassy ground."

The late Mr. J. C. Andersson remarks (Birds of Damaraland, edited by Mr. J. H. Gurney, p. 271,) "Small flocks of this Plover may at times be seen in Damaraland, but it is never common and very shy. All my Damara specimens were procured at Objimbinque, in the moist bed of the river Swakoss."

"The iris is very dark brown, the ring round the eyes black, the legs yellow, and the toes dusky."

"Individual specimens differ a good deal in size; but there is no marked distinction in the dimensions of the sexes. The largest adult specimen I obtained measured eight inches in length, the smallest seven."

Mr. Layard, in his "Birds of South Africa," says that he obtained specimens near Colesberg, where they are found in flocks of fifteen or twenty very far away from water. They were scarce, and only seen after showers of rain, which bring out small coleoptera, etc., on which they seem to feed and get very fat.

Mr. Harting further remarks, "M. Verreaux found this species on the Orange River, and a specimen from Algoa Bay in the British Museum. Other examples procured in South Africa by Von Horstock are in the British Museum."

"It is not included by Rüppell in his 'Systematische Uebersicht der Vogel Nord. Ost. Africas.'"

Von Heuglin, in his "Vogel Nord. Ost. Africas," has the following about this bird, under the head of *Charadrius damarensis*:—"Young birds, and in winter plumage, are above a duller and more sooty grey, also the whole crop and upper parts of the breast, the feathers of which are somewhat lighter at the edge, and foremost parts of the crown of the head, (not however of the white forehead,) are clearly

and finely bordered with a fallow shade; the white part of the face sprinkled with pale grey; the white markings of the edges of the secondary wing feathers wanting.

"I have met with small flocks of this Dotterel on the northern coasts of Egypt and in the Gulf of Suez here and there during winter, but I have no skin to prove the fact.

"In the morasses of East Kordofan, on the lower White and on the Blue Nile, on the rain-beds of the province of Irsalabat, and along the shore of the Tana Lake in Abyssinia we found also red rusty-necked Plovers during the months of April and May, in the most splendid plumage. In the autumn young birds of the same sort which, according to the descriptions of Pallas and Wagler, can neither be assigned to *Charadrius asiaticus* nor to *C. mongolicus*. I called the species in my systematic list drawn up in Africa, *Charadrius ruficollis*. It belongs however to *Charadrius damarensis*, Strickland, which is specifically distinguished by the shorter wings and tarsi, the white colour of the outer edge of the six to ten minor wing feathers, and the white axillary feathers from *C. asiaticus*, Pallas. I indeed received this species, called by him *C. asiaticus*, in April at Adowa. Blanford obtained it in August at Samhar and at Massowah. It lives in pairs and small companies on sand-banks, on forest brooks, old dry lakes, and clefts of rocks, as well as on pasture lands. It is probably a resident bird in North-east Africa."

There can be no doubt but that the bird thus described by Heuglin is that of this notice. Strickland's name, it will be seen, is one of the synonymes.

By the kindness of Mr. Harting I am able to describe and figure a male bird from Andersson's collection. It was shot at Knysna on January 31st., 1866. This bird has the head, nape, and all the upper parts of the body olive brown; primaries black; the first with the entire shaft white; second with half the shaft white, as seen from above. Secondaries long, extending with the primaries beyond the end of the tail. Cheeks, forehead, eyebrows, sides of the face, and throat white. A broad belt of rufous extends across the breast, the lowest feathers of which are tipped with dark umber brown. Abdomen and under tail coverts white. Tail with the outer feather on each side smoke-grey, the others darker in colour as they approach the middle; axillary feathers white. Wings underneath dark grey, with the primary shafts white. Legs and toes of a greenish grey colour, middle and outer toes partly united at base.

There is a communication in the June number of the P.Z.S. for 1875, from Mr. Dresser, in which I find that that gentleman had

forestalled me with Mr. Schluter, of Halle, in the matter of the egg of this bird. Mr. Dresser thus describes the egg, which, however, is not, as he suggests, unknown to science, inasmuch as Von Heuglin informed me two years ago that a specimen had passed through his hands.

"This egg," says Mr. Dresser, "which I now exhibit somewhat resembles those of *Eudromias morinellus*, but is darker and rather more green in tinge of ground colour than the general run of those eggs, beside being much less spotted and more oval in shape. It is, as will be seen, warm buff, with the faintest greenish tinge, and sparingly spotted with black, the markings being comparatively small, and not large blotches as in those of *E. morinellus*. In size it measures 1.25 by 1.075 inches, and is oval in shape, very slightly tapering towards one end. It is especially interesting to obtain not only the egg but the bird itself from the locality where it was originally described."

Mr. Dresser says that his specimens of the bird prove Mr. Harting's description and figure to be correct, in contradiction to the doubt thrown on the matter by Dr. Otto Finsch (*Ibis*, 1872, p. 144), who considered that Mr. Harting's *E. asiaticus* should stand as *C. damarensis*, a bird originally described by Strickland in the "Contributions to Ornithology," and that Mr. Harting's *E. veredus* is the *Charadrius asiaticus* of Pallas, a conclusion in which I cannot now concur.

Mr. Dresser doubts whether the bird is correctly included in the genus *Eudromias*, because the sexes do not differ in plumage; but, as Mr. Harting says, the difference observable in the sexes of *Eudromias* is only a difference of *intensity* of colour, and not of the colour itself, or the disposition of it. The similarity of the eggs, also, is, I think, an additional proof that Mr. Harting is right. I therefore do not change the designation which he has given to this species.

It gives me great pleasure to acknowledge the kindness of Mr. Dresser in entrusting me with his rare and almost unique egg of this bird for illustration; and ornithologists I feel sure will join in this vote of thanks.

This bird will be found figured by Mr. Harting in the "*Ibis*," 1870, plate v.

GRALLATORES.

Family CHARADRIIDÆ. (Bonaparte.)
Genus *ÆGIALITIS.*

MONGOLIAN RINGED PLOVER.

Ægialitis mongolicus.

<i>Charadrius mongolus,</i>	PALLAS; Reise, iii., p. 700, 1776.
“ <i>mongolicus,</i>	PALLAS; Zoogr. Ross. As., ii., p. 136, 1811.
“ <i>ruficollis,</i>	CUVIER; Mus. Paris.
“ <i>cantianus,</i>	HORSFIELD; Trans. Linn. Soc., xiii., p. 187, 1820.
<i>Ægialitis pyrrhothorax,</i>	KEYS. ET BLAS.; Wirb. Eur., p. 70, 1840.
“ <i>mongolicus,</i>	HARTING; Ibis, 1870, p. 384.
<i>Pluvier à collier roux,</i>	OF THE FRENCH.
<i>Kragen-Regenpfeifer,</i>	OF THE GERMANS.

Specific Characters.—Above a grey brown, with the forehead maroon, more or less dark; across the breast a broad belt of red; the last tail feather but one grey on the outside, white on the inner web, and terminated by a large brown spot. Length seven inches. Bill seven tenths. Wing from carpus five inches. Tarsus one inch and three tenths.

THIS Plover, of which Mr. Harting has given a very complete account in the “Ibis,” (1870, p.p. 384-392,) has a very wide range, extending over Mongolia, Siberia, Amurland, India, China, Java, Malay Archipelago, and Australia. Canon Tristram met with it in Palestine, at the mouth of the Kishon; and Von Heuglin has recorded it from Kordofan, in the Danakil Country. It was introduced into the European list by Temminck, in consequence of a specimen having been shot in the neighbourhood of St. Petersburg, and was first figured by Gould in his “Birds of Europe.” I think,

however, that although the species is a good one, its claims to a position in the European fauna are so slight, that it ought to be erased from the list; and I shall merely refer my readers to Gould's figure, and the specific diagnosis above, in case they should meet with it again in the confines of Europe. Its history and geographical range will be found fully detailed in Mr. Harting's paper above referred to.

END OF VOL. IV.



